Product Training Guide

Plasma Display Systems
PDP-5030HD & PDP-4330HD

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Pioneer

SERVICE

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Preface

This technical training guide will address the disassembly and adjustments of the Pioneer PDP-5030HD & PDP4330HD Plasma Display Systems.
This guide was designed as a servicing aid and is not intended to replace the service manual. The student should have the appropriate service manual on hand when when using this guide. Data in the service manual for this unit contains specific information on safety, parts and adjustments.

Safety information

Important safety data for this Pioneer model is contained in the service manual. Before returning the unit to the customer, complete all product safety obligations and tests. Technicians who bypass safety features or fail to carry out safety checks may expose themselves and others to possible injury, and may be liable for any resulting damages.

For more information on electronic circuits and block diagrams refer to Service manuals ARP3107, ARP3111 & ARP3113.

Lead in the solder used in this product is a known reproductive toxicant which may cause birth defects or other reproductive harm. (California Health and Safety Code Section 25249.5).

When servicing this or handling circuit boards and other components which contain solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

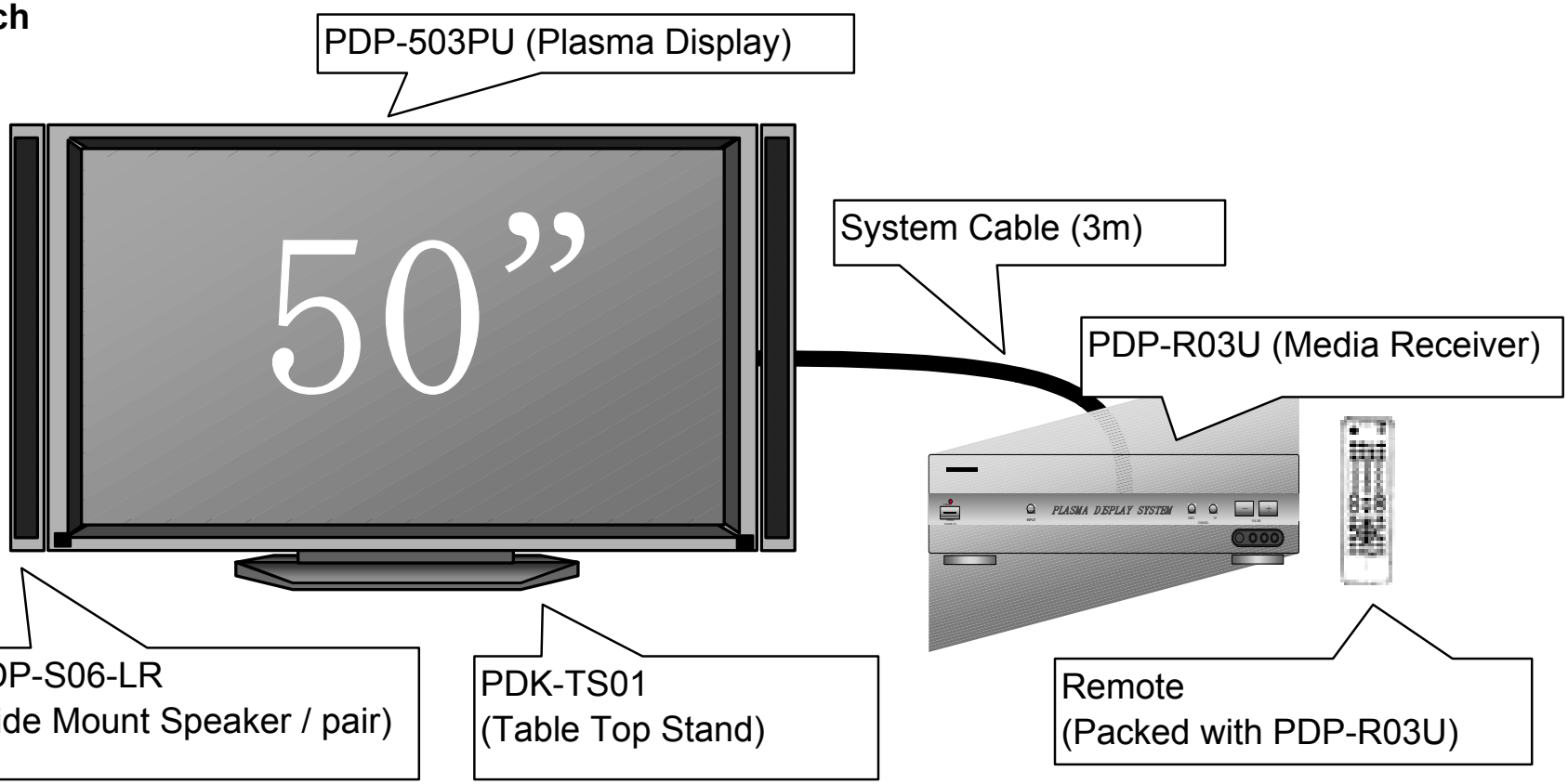
Model Number **PDP-5030HD**

Consists of
- 1 PDP-503PU (Plasma Dispay)
- 1 PDP-R03U (Media Receiver)
- 1 Remote (Packed with PDP-R03)
- 1 System Cable (3m long, Packed with PDP-R03U)
- 1 PDP-S06-LR (Pair of Side Mount Speaker)
- 1 PDK-TS01 (Table Top Stand)

Optional Equipment PDWB-5003 (Flat Wall Mount)
PWM-503 (Tilt Wall Mount)

System Configuration

50 inch



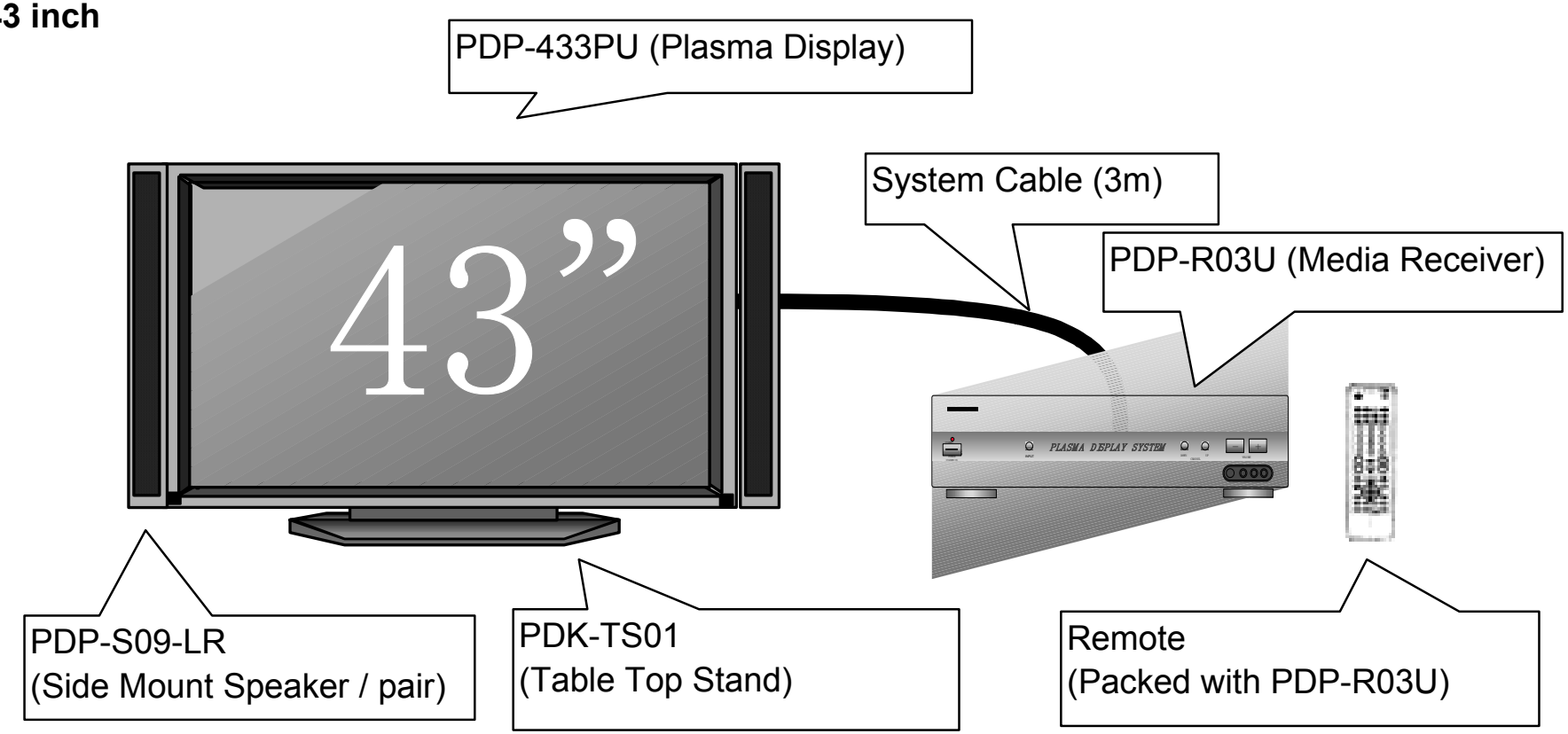
Model Number **PDP-4330HD**

Consists of
- 1 PDP-433PU (Plasma Dispay)
- 1 PDP-R03U (Media Receiver)
- 1 Remote (Packed with PDP-R03)
- 1 System Cable (3m long, Packed with PDP-R03U)
- 1 PDP-S09-LR (Pair of Side Mount Speaker)
- 1 PDK-TS01 (Table Top Stand)

Optional Equipment
- PDP-S08 (Under Mount Speaker)
- PDWB-5003 (Flat Wall Mount)
- PWM-503 (Tilt Wall Mount)

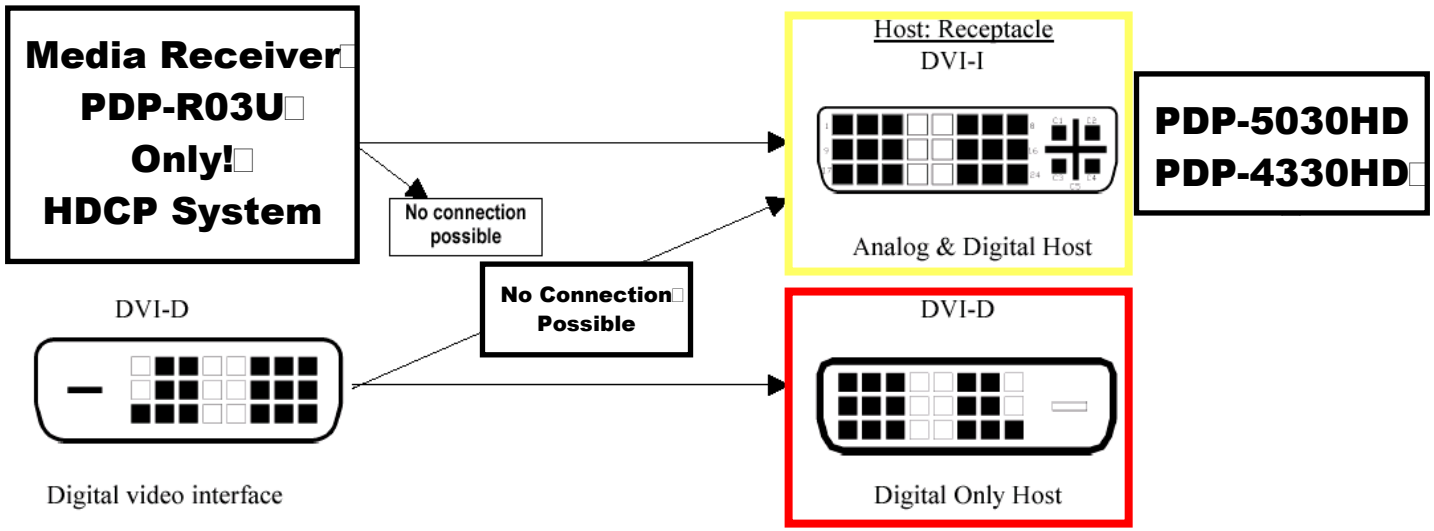
System Configuration

43 inch



DVI-I interface for Plasma Display Systems

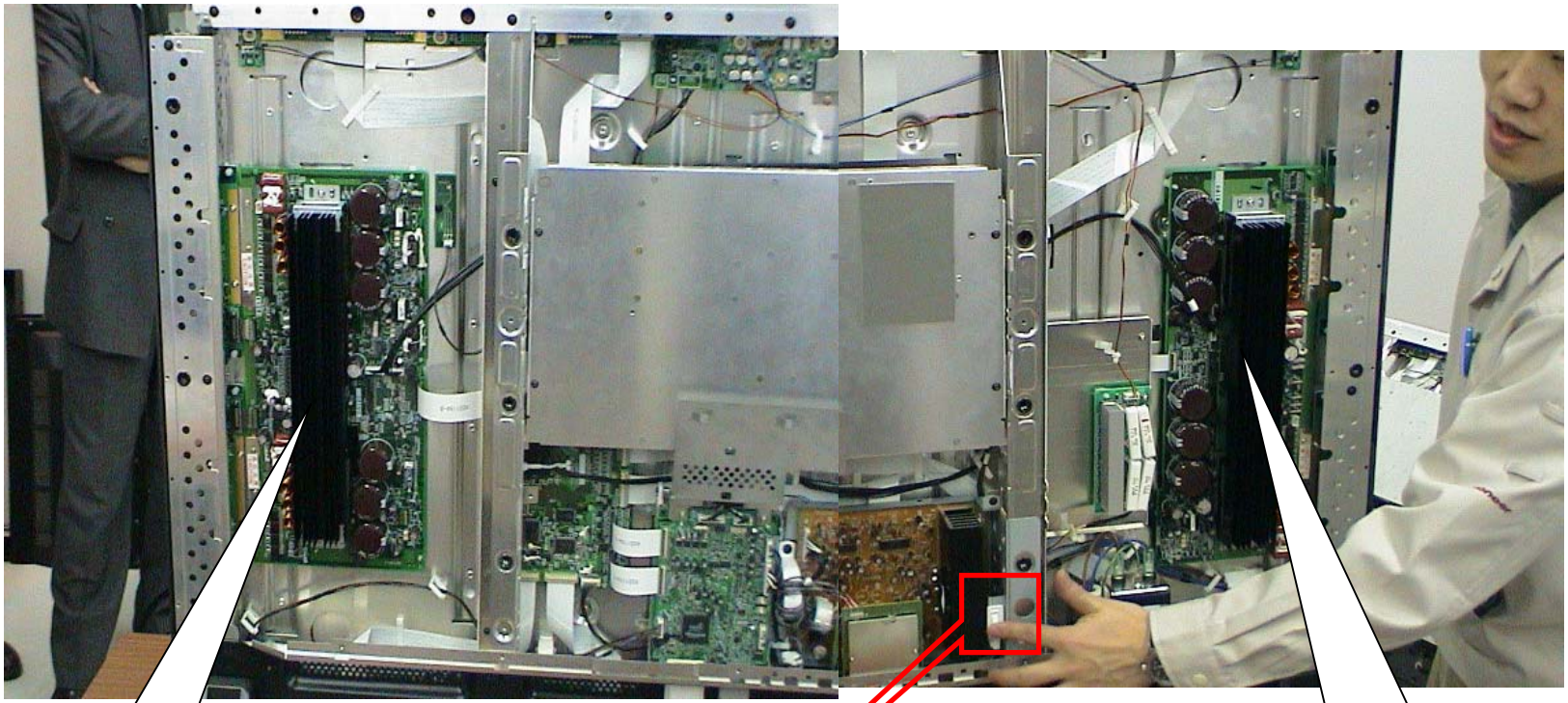
There are two types of DVI interface; DVI-D and DVD-I.



DVI-I : Combined Digital and Analog Pin Assignments (Yellow square)

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	TMDS Data 2-	9	TMDS Data 1-	17	TMDS Data 0-
2	TMDS Data 2+	10	TMDS Data 1+	18	TMDS Data 0+
3	TMDS Data 2/4 Shield	11	TMDS Data 1/3 Shield	19	TMDS Data 0/5 Shield
4	TMDS Data 4-	12	TMDS Data 3-	20	TMDS Data 5-
5	TMDS Data 4+	13	TMDS Data 3+	21	TMDS Data 5+
6	DDC Clock	14	+5VDC Power	22	TMDS Clock Shield
7	DDC Data	15	Ground (return for +5, Hsync and VSync)	23	TMDS Clock +
8	Analog Vertical Sync	16	Hot Plug Detect	24	TMDS Clock -
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground (RGB return)		

Supplied cable must be used.



Y-Drive Heat Sink

X-Drive Heat Sink

Trap switch must be closed to operate with back off.

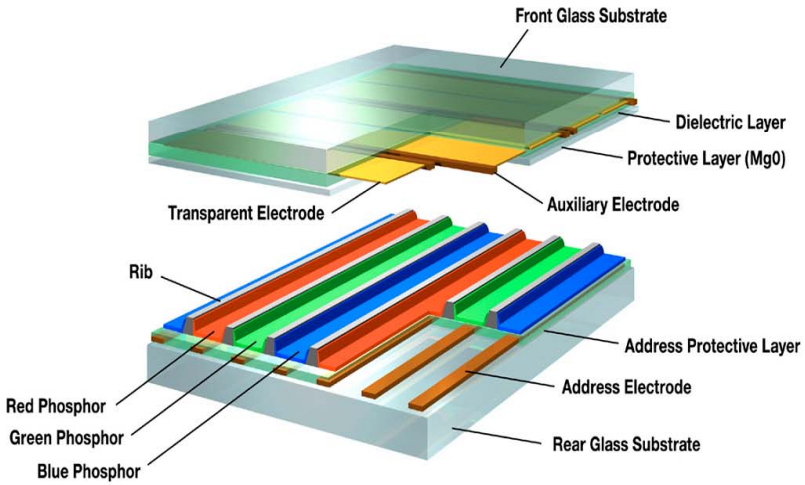
AC Trap Switch

Caution!
See Page 27 in this guide or page 85 in the service manual.

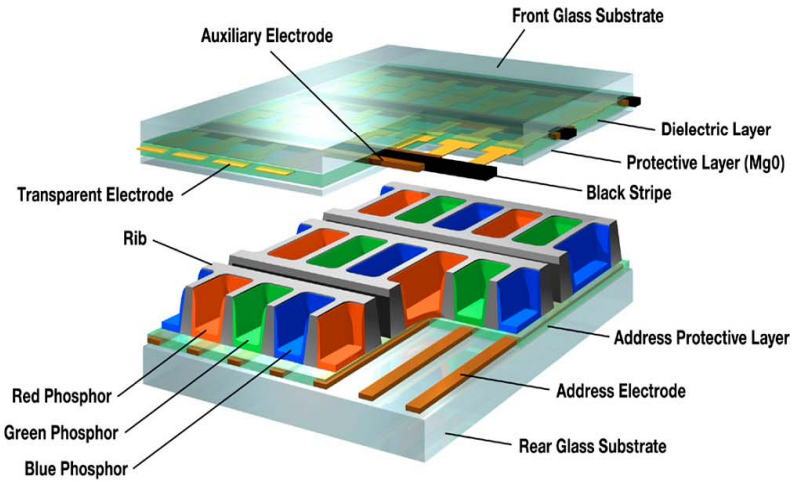
Caution
Due to fan less operation the X & Y drive PCB's have heat sinks attached and must be reinstalled if PCB needs replacement.

Higher luminance is realized by changing the cell structure.

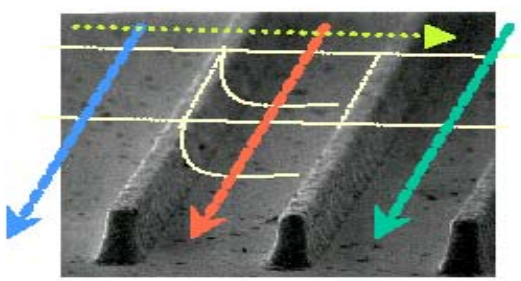
Cell Structure Comparison



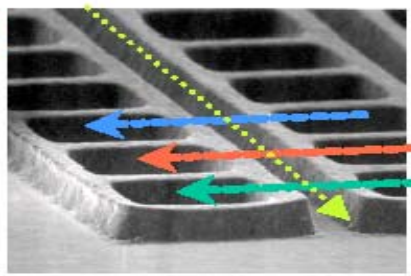
Conventional straight-type cell structure



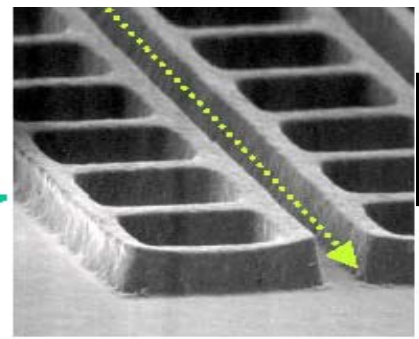
Pioneer Boxed Cell Structure



Conventional PDP
(PDP-501)



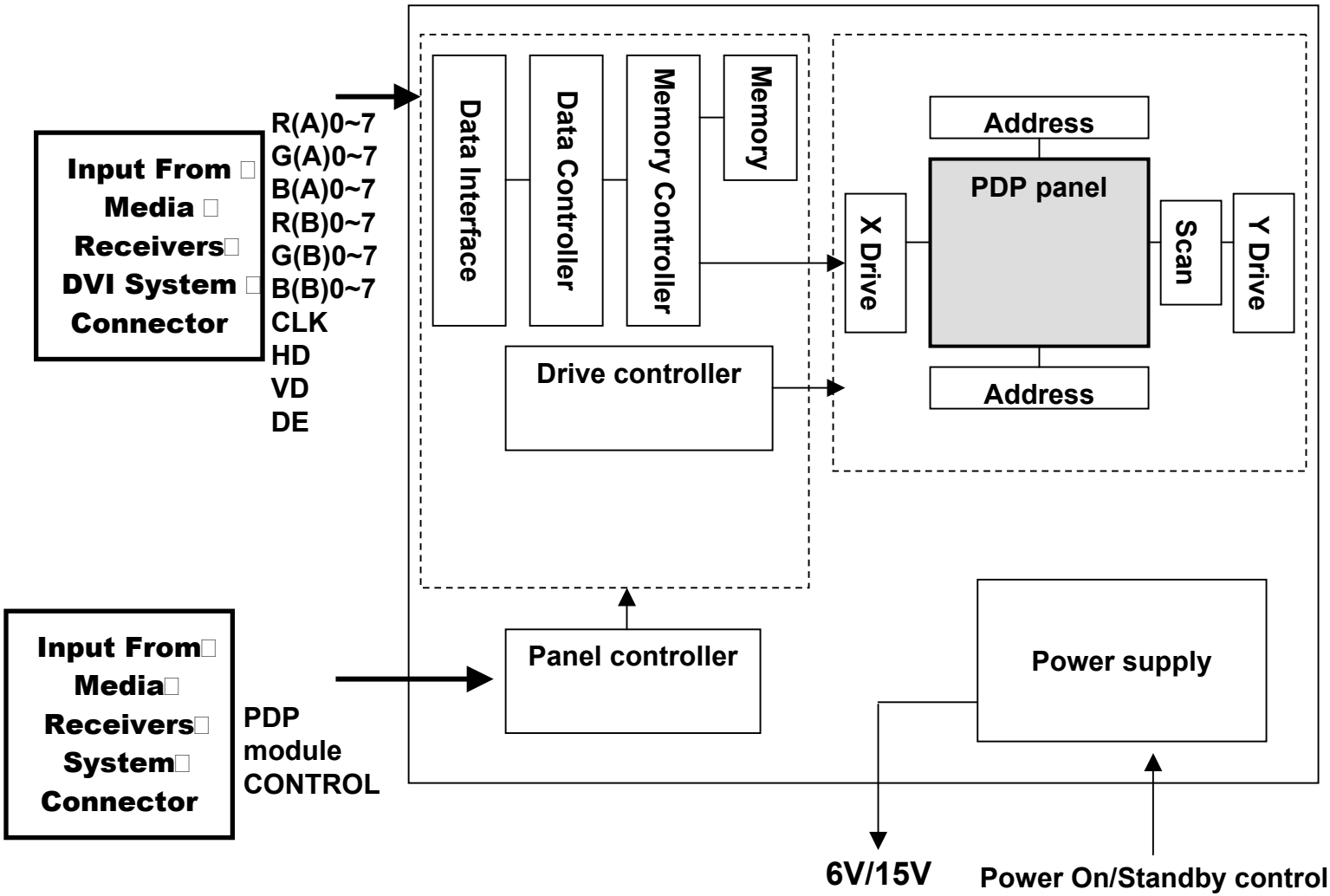
Waffle Rib Structure/
Encased Cell Structure
(PDP-502)



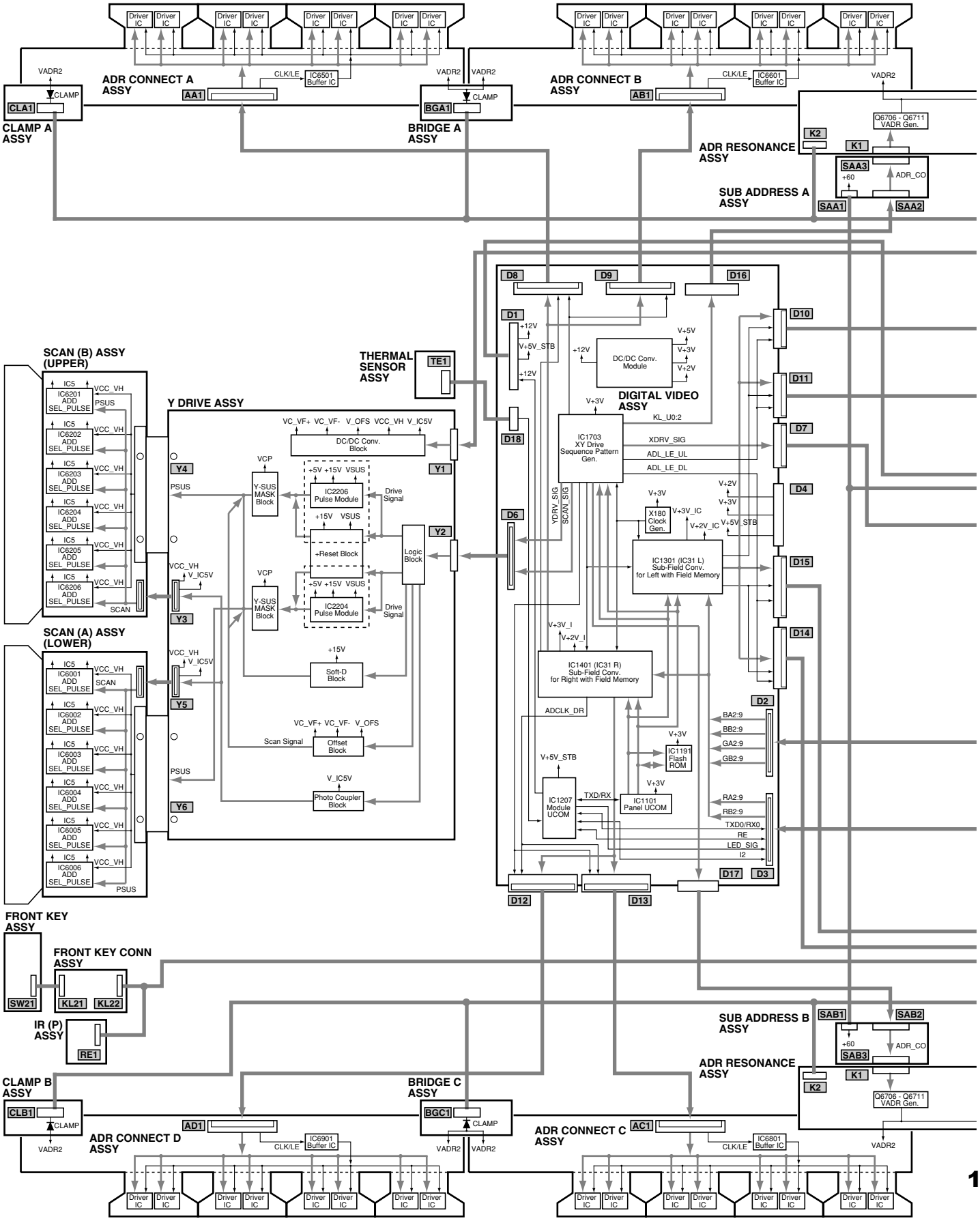
Deep Waffle Rib Structure/
Deep Encased Cell Structure

PDP-5030HD
PDP-4330HD

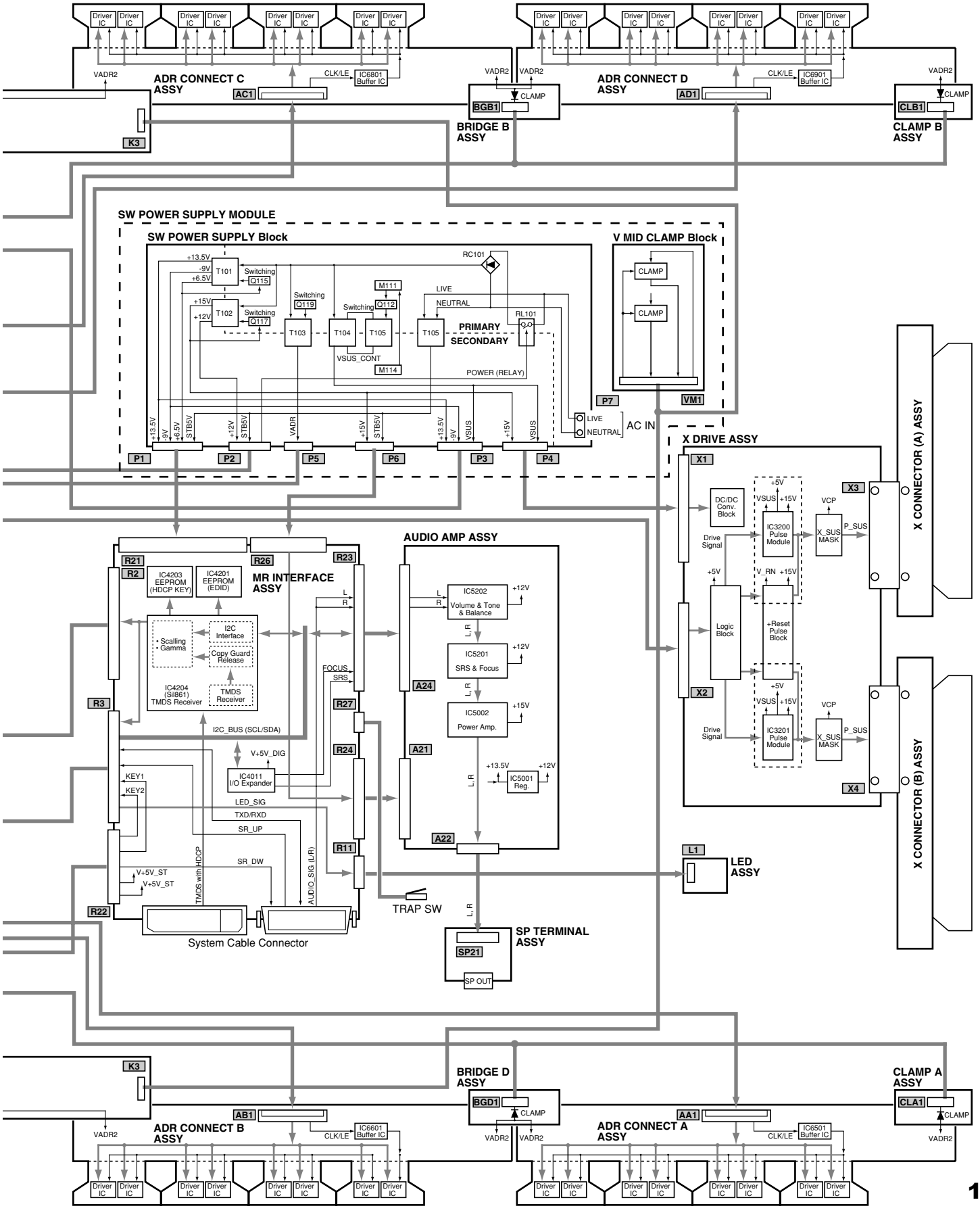
Overall Block diagram



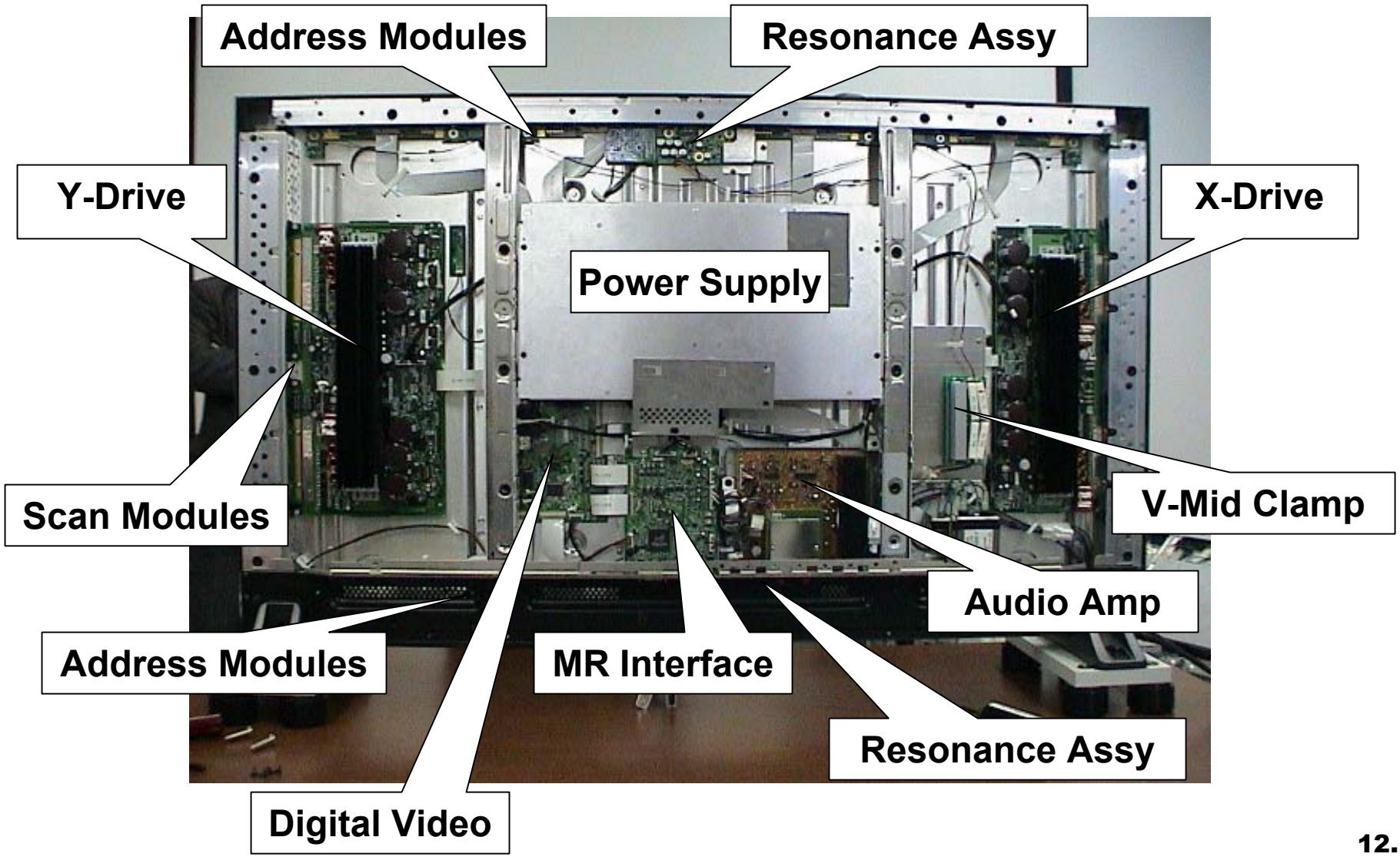
BLOCK DIAGRAM



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



Main PCB Layout PDP-503PU & PDP-433PU



AUDIO AMP and SP TERMINAL ASSYS

AUDIO AMP ASSY

IC5202 (CXA2021S)

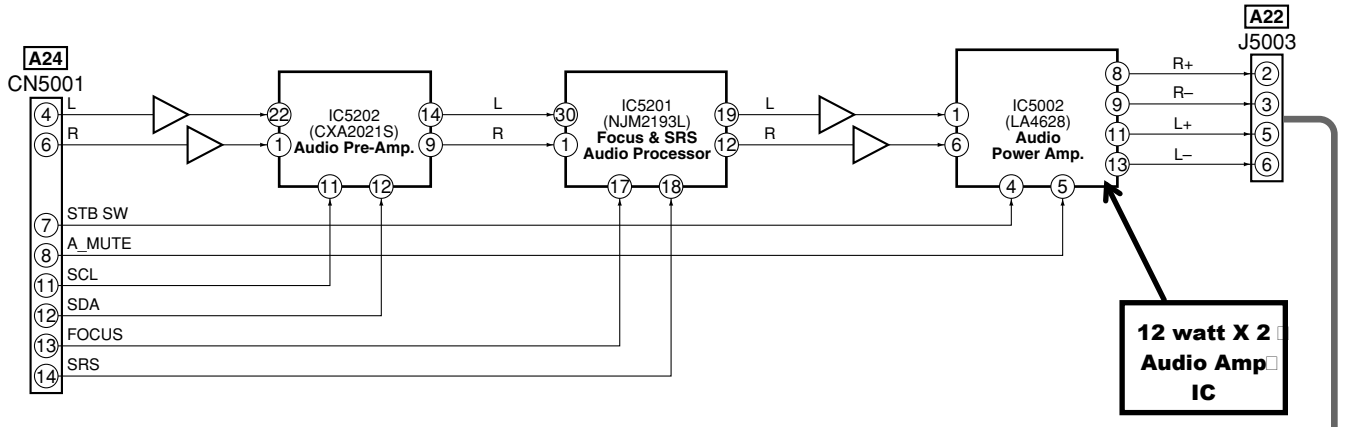
No.	Voltage (V)	No.	Voltage (V)
1	5.9	12	5.25
2	0	13	1.73
3	5.95	14	5.95
4	5.94	15	5.92
5	5.98	16	5.91
6	6.02	17	5.93
7	6.02	18	5.92
8	7.38	19	5.94
9	5.95	20	5.95
10	1.55	21	11.91
11	5.24	22	5.9

IC5201 (NJM2193L)

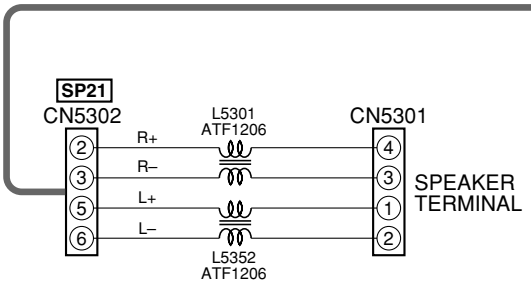
No.	Voltage (V)	No.	Voltage (V)
1	5.95	16	11.91
2	5.94	17	0
3	5.84	18	0
4	5.98	19	5.98
5	5.98	20	5.91
6	5.97	21	5.97
7	5.98	22	5.98
8	5.98	23	5.98
9	5.98	24	5.98
10	5.97	25	5.97
11	5.97	26	5.98
12	5.98	27	5.98
13	5.96	28	5.84
14	5.98	29	5.94
15	0	30	5.95

IC5002 (LA4628)

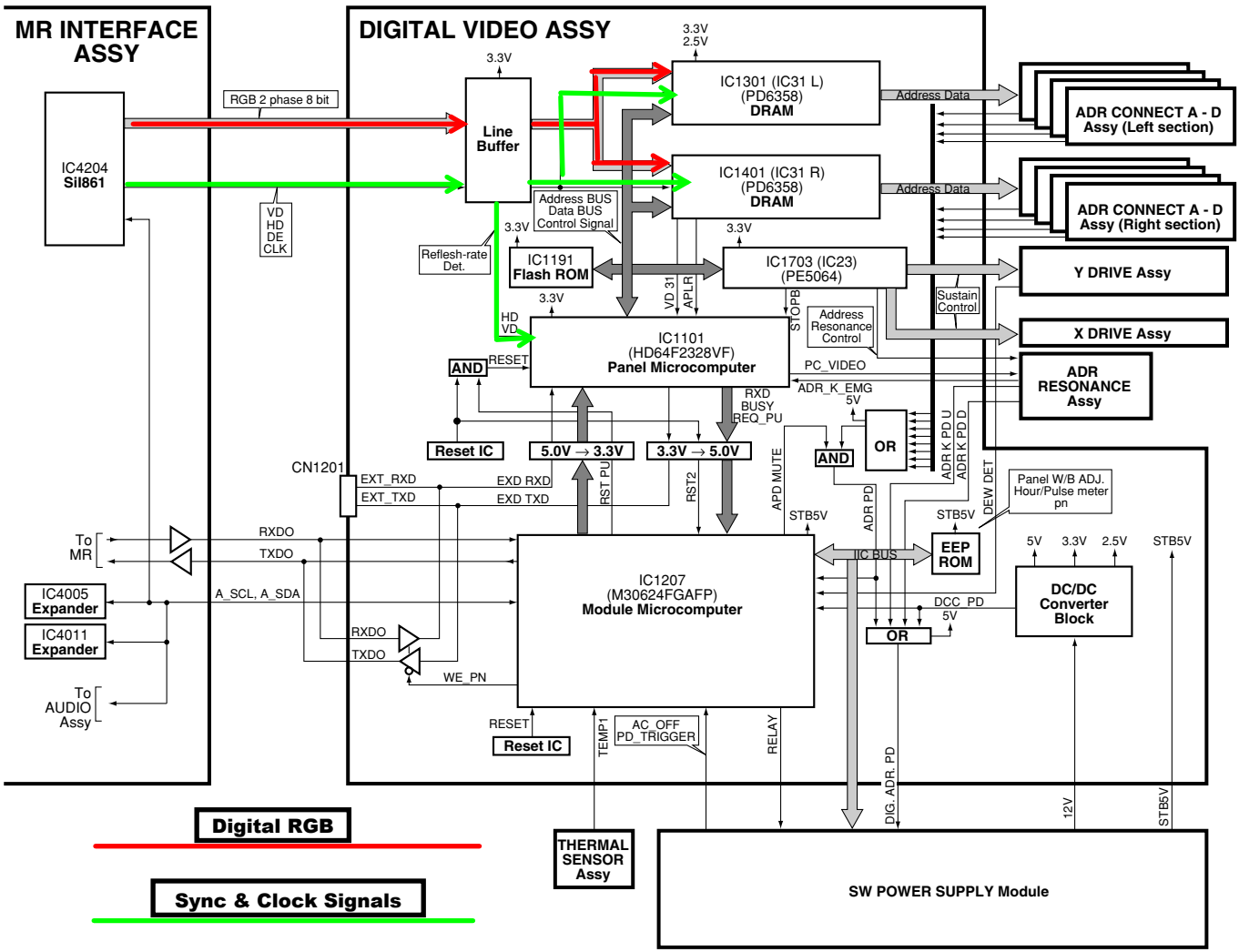
No.	Voltage (V)
1	1.6
2	7.5
3	0
4	3.37
5	2.29
6	1.6
7	1.97
8	7.3
9	7.3
10	0
11	7.3
12	0
13	7.3
14	15



SP TERMINAL ASSY



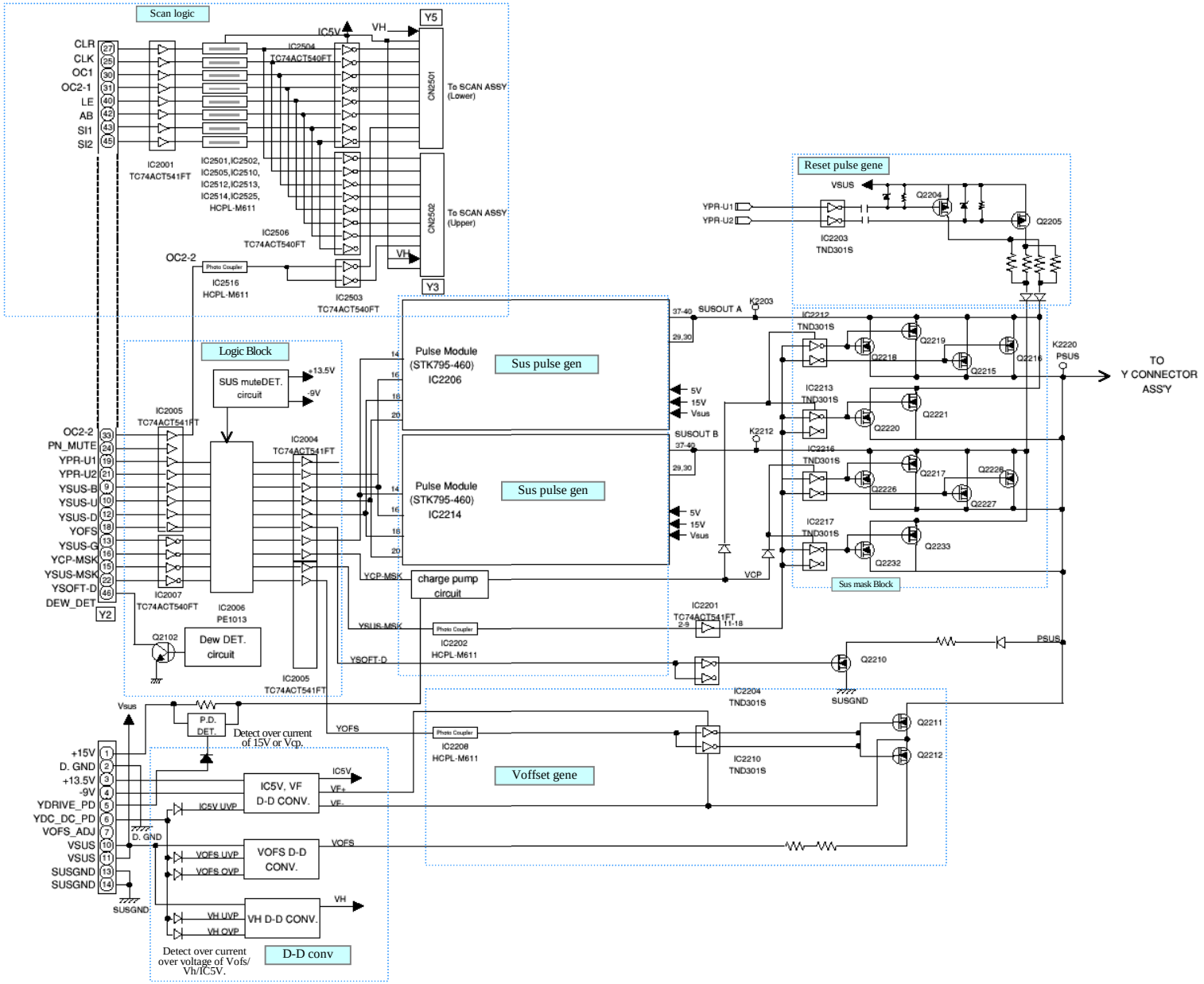
DIGITAL VIDEO ASSY



Digital Video Assembly

The 2 phase 8 bit RGB signal, sync, data and clock lines input the Digital Video Assembly from the MR Interface assembly. The signals pass through the line buffer and into IC1301 and IC1410 (sub-field Data Generators) where the address data is generated and sent out to the left section and right section address connectors A-D.
X and Y drive sustain control is preformed by IC1703 and the panel microcomputer IC1101. The panel microcomputer monitors the horizontal and vertical drive signals to select the proper refresh rate. The module microcomputer IC1207 controls the panel microcomputer via logic lines sent through voltage logic level converters. IC1207 is controlled by the main microcomputer inside the media receiver. IC1207 functions also include thermal sensor monitoring, dew detection, reset control and is used not only to switch on the power supply but to also switch off the power supply should one of the power down detect lines activate.

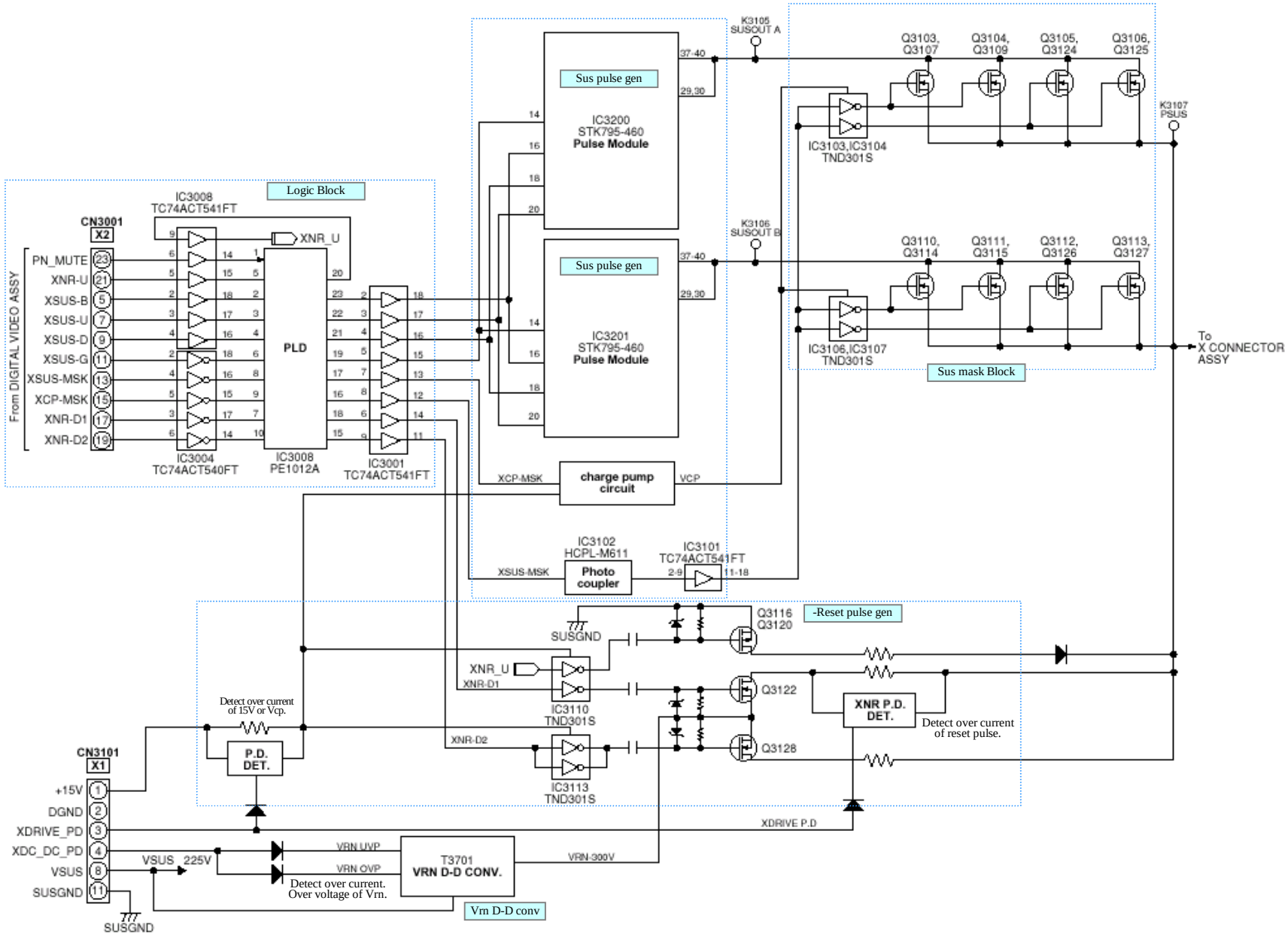
- Y drive circuit block -



Y- Drive Block

The Y- Drive PCB receives Scan and Y – Drive signals from the Digital Video Assembly's drive sequence generator. Scan signals are processed by the logic block and sent out to the upper and lower scan drive assembly's. The Y – Drive signals (YSUS up, YSUS down, YSUS B plus and YSUS ground are also sent to the logic block. The four signals are sent out in parallel to the upper and lower sustain pulse generators. The drive signal output from the sustain pulse generators are controlled by reset, offset and mask FET's shown in each block to obtain the Panel Sustain signal sent to the upper and lower scan drive modules. This module also contains a DC to DC converter, dew detect and over current detect circuits.

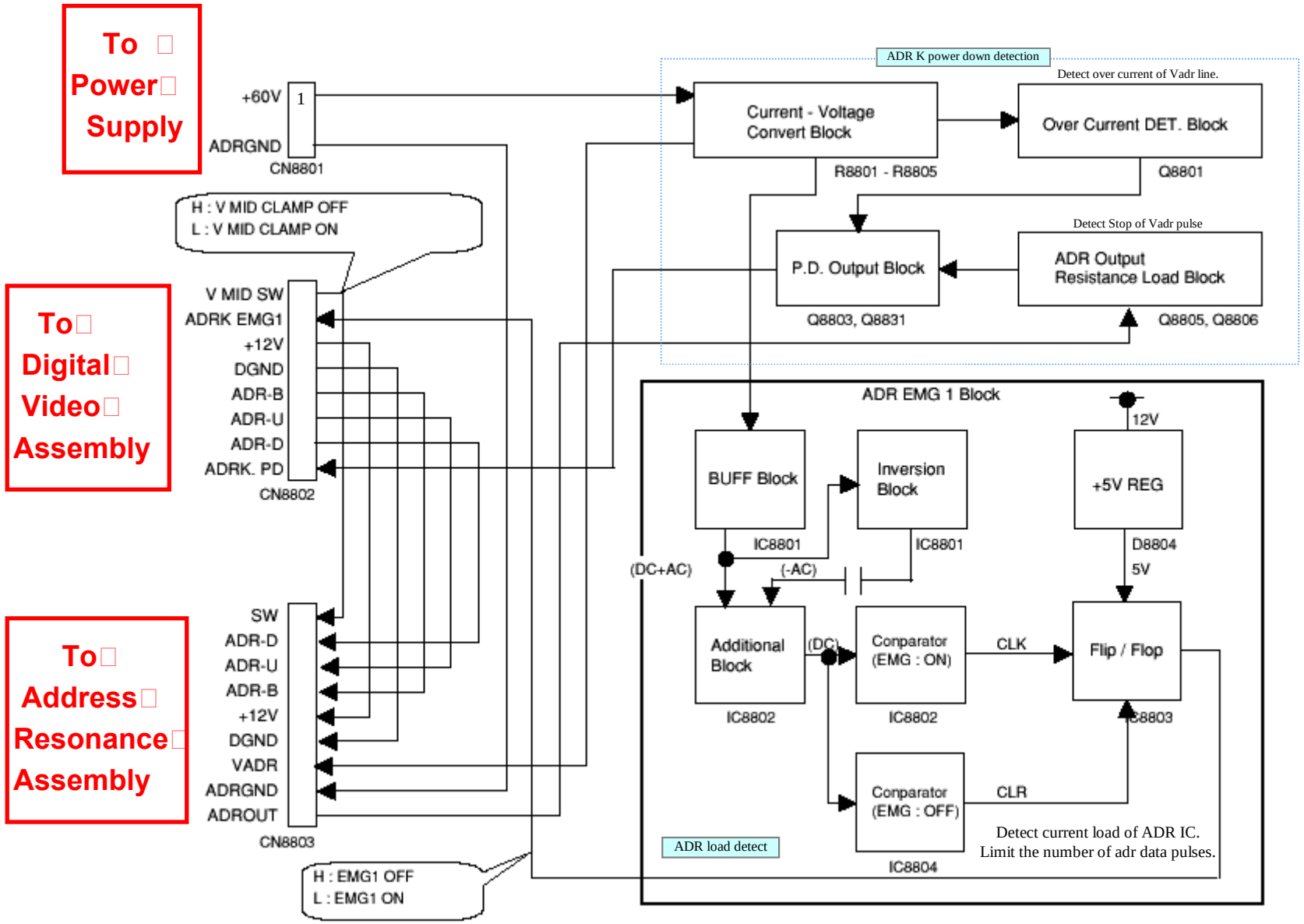
- X drive circuit block -



X- Drive Block

The X- Drive PCB receives X – Drive signals from the Digital Video Assembly's drive sequence generator. The X – Drive signals (XSUS up, XSUS down, XSUS B plus and XSUS ground are sent to the logic block. The four signals are sent out in parallel to the upper and lower sustain pulse generators. The drive signal output from the sustain pulse generators are controlled by reset and mask FET's shown in each block to obtain the Panel Sustain signal sent to the upper and lower X connector assembly's. This module also contains a DC to DC converter and over current detect circuits.

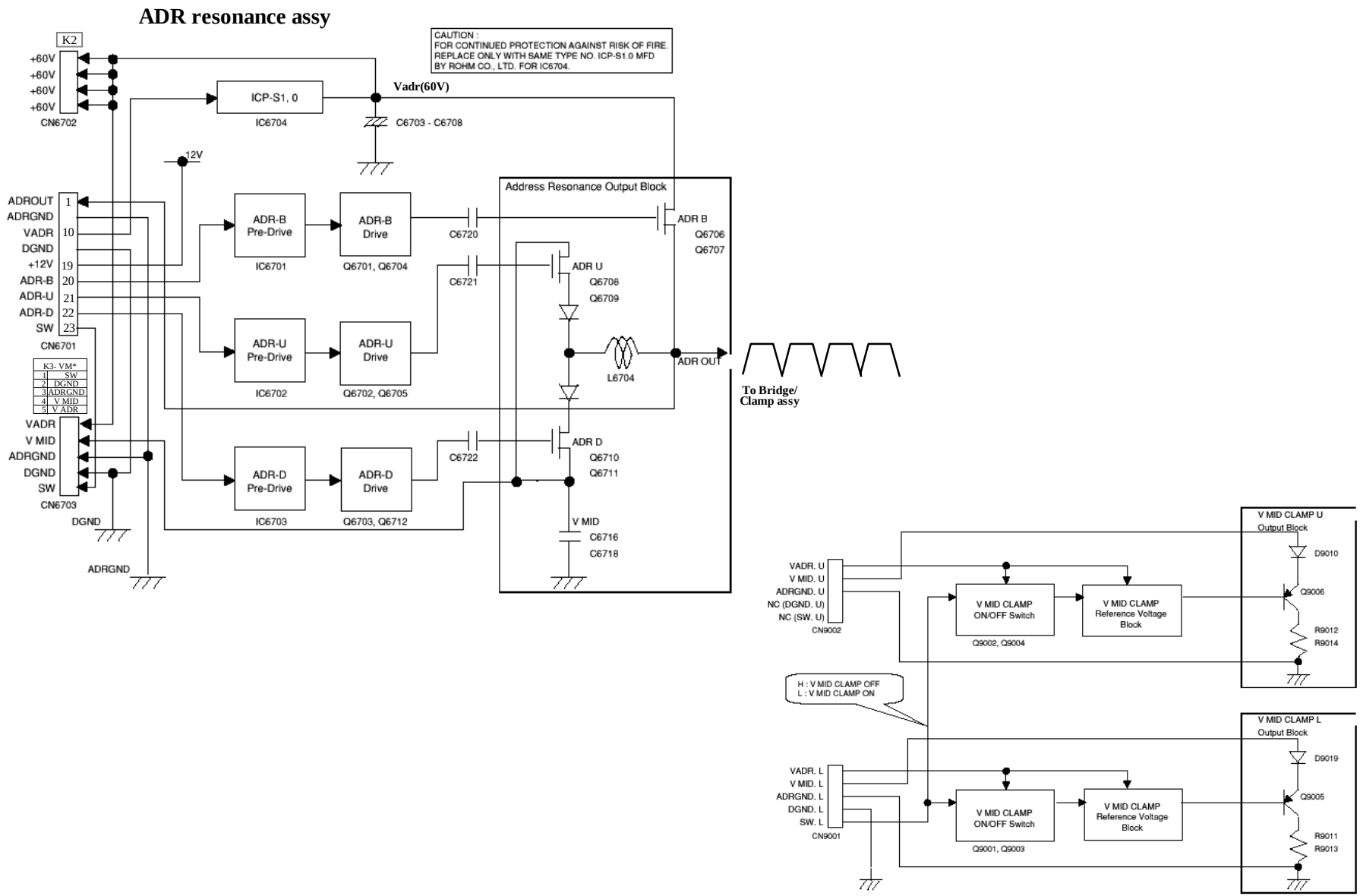
- Sub Address circuit block -



Sub Address Block

The two Sub Address Circuits are located just above and below the address driver connect assembly's (between B & C connectors). See the overall block Diagram for locations. The upper and lower sub address circuits monitor the current draw of the 60 volt supply to the address drivers. If a small amount of current draw is detected (more than normal) a signal is sent back to the Digital Video Assembly (ADRK EMG1) as an emergency signal and the Digital Video Assembly will limit the number of address data pulses in order to lower the current draw. If the current draw is too large the address power down signal will be sent to the Digital Video Assembly (ADRK PD) and the panel will go into power down condition. (red flashing LED).

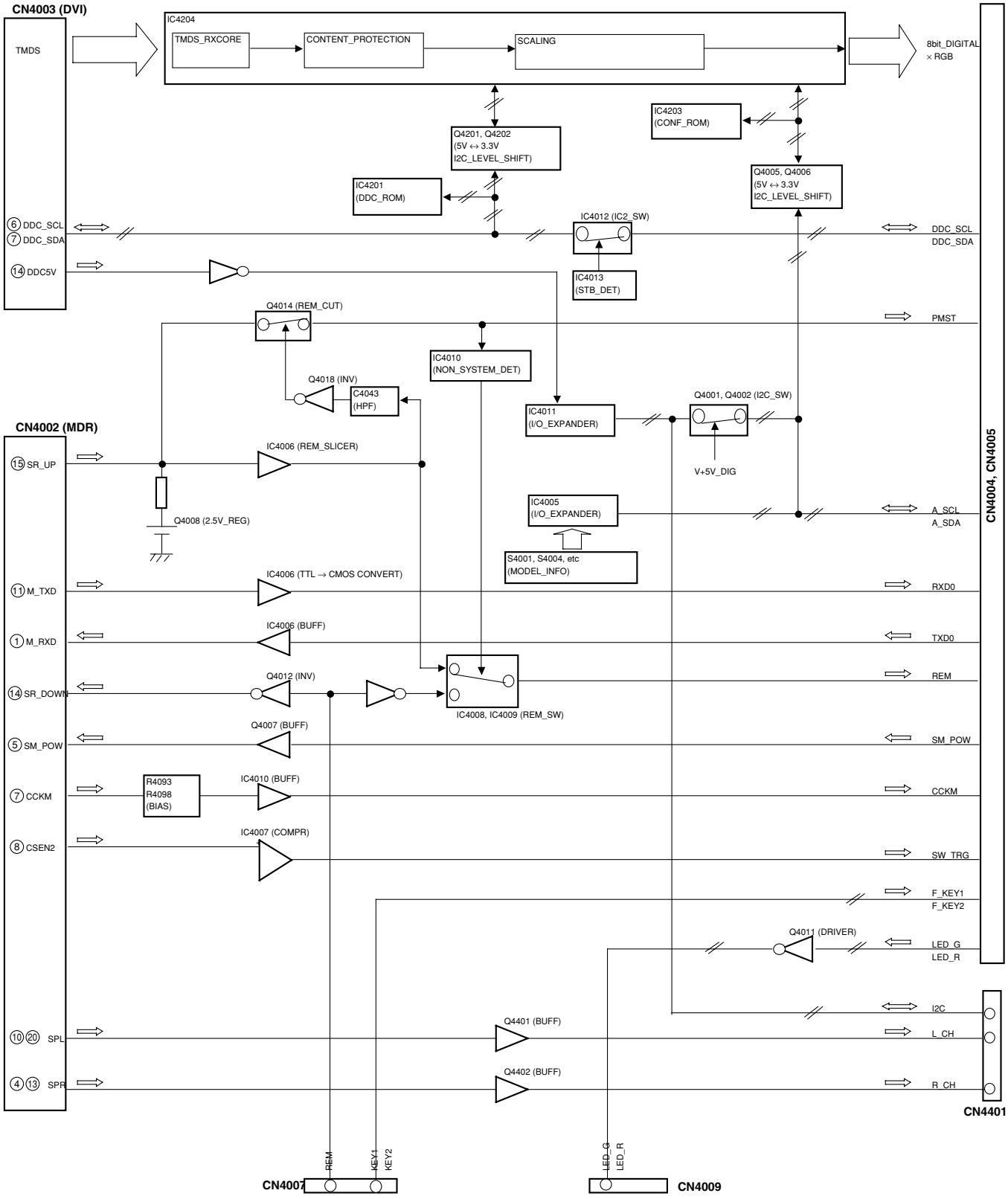
Address resonance/V mid clamp circuit block -



Address Resonance & V-Mid Assembly's

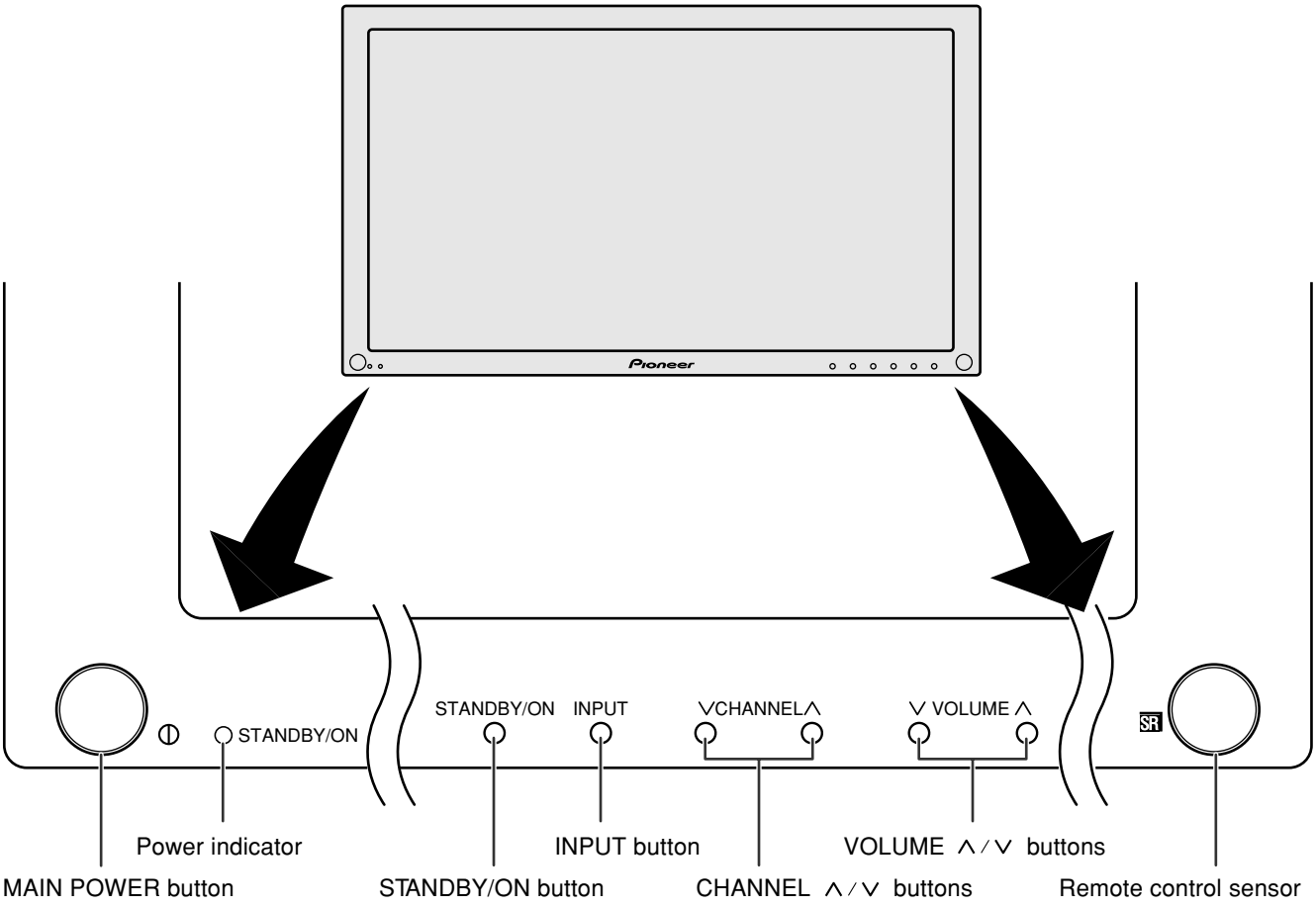
The two Address Resonance circuits are located next to each Sub Address PCB and the V-Mid circuit is located just to the right of the power supply PCB. In later production models the V-Mid assembly will be located on the power supply bracket. These circuits are used to protect the address driver IC's in the event of extreme picture changes. An example would be if the entire picture was alternating each cell black and white. This causes the IC's to overheat. The Digital Video circuit will detect the rapid frequency change in the addressing signals and will turn on the V-Mid clamp switch. The V-Mid circuit will take the normally 60 volt address output signal and lower it by half (30 volts). The voltage will return to normal once the Digital Video circuit has determined the frequency to be an acceptable rate.

MR INTERFACE ASSY

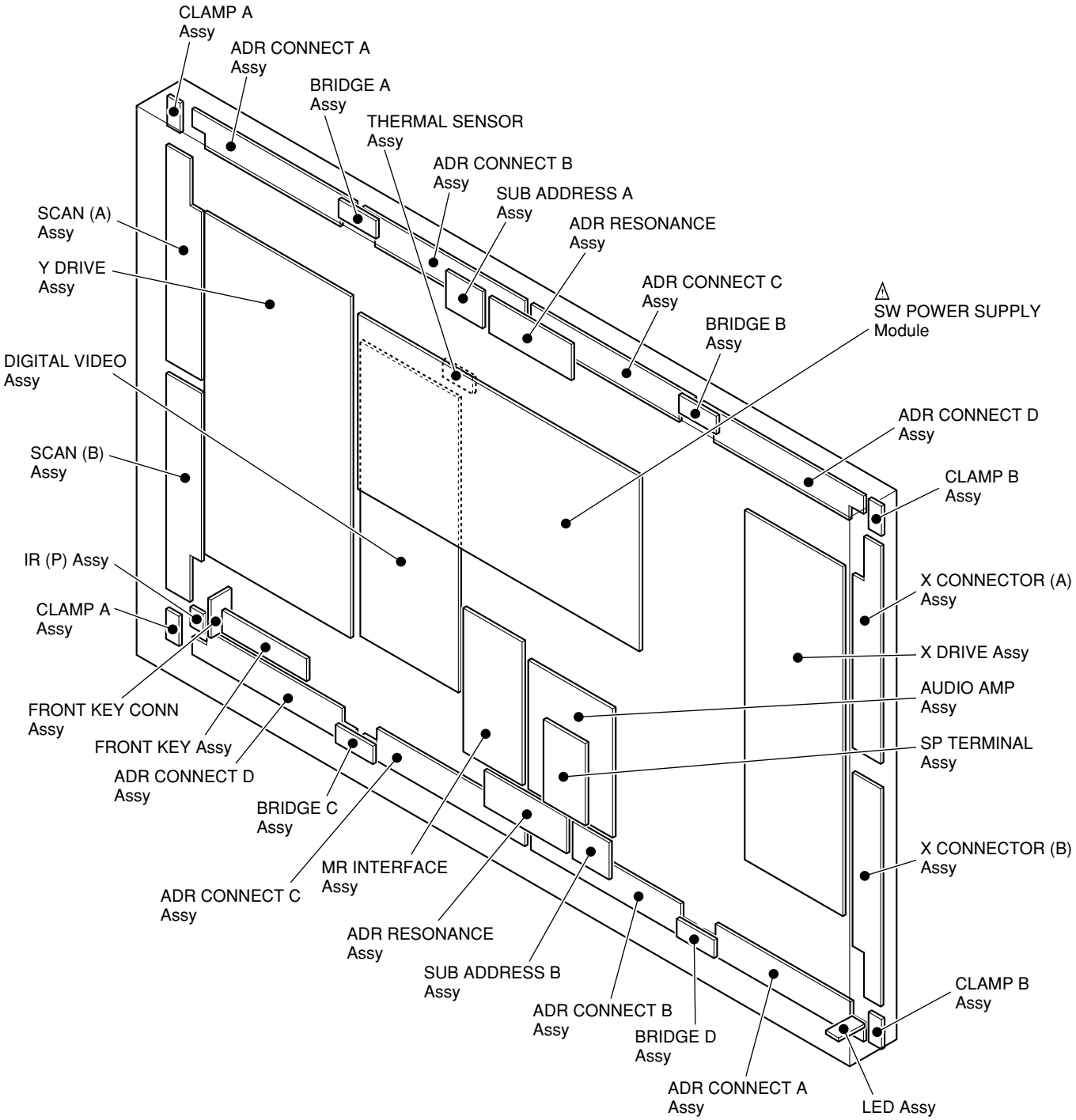


PANEL FACILITIES

Plasma Display



PCB LOCATION



● Rear View

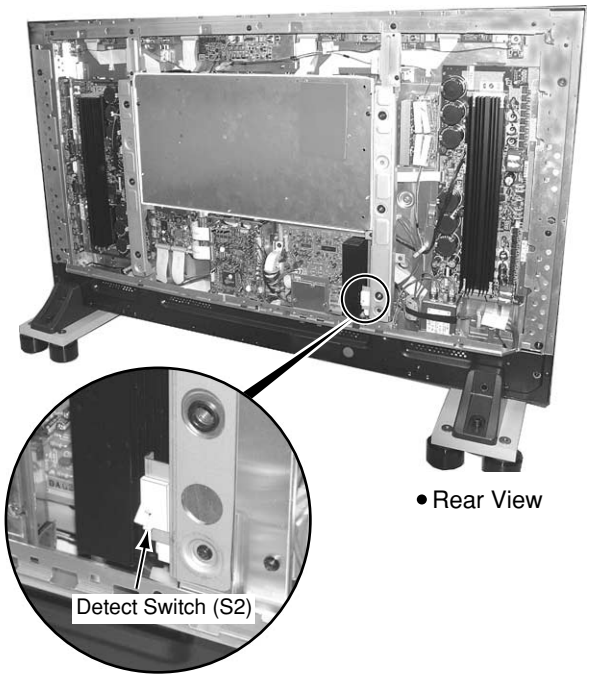
DISASSEMBLY

About Detect (Trap) switch

This unit uses a "Rear Case opened ! detection" system.
Please follow the outline and cautions below.

Outline and caution

In servicing, the media receiver should be connected to the plasma display. Input signals passing through the media receiver adopt contents protection by HDCP for copyright protection.
After removing the rear case do not apply power until the Detect (Trap) switch has been defeated. The media receiver and plasma will not power up otherwise.
Detect switch does not detect at the power supply OFF and the remote control unit wait state. Please close this detect switch with tape before turning on the power for service and diagnoses of the plasma display.



• Rear View

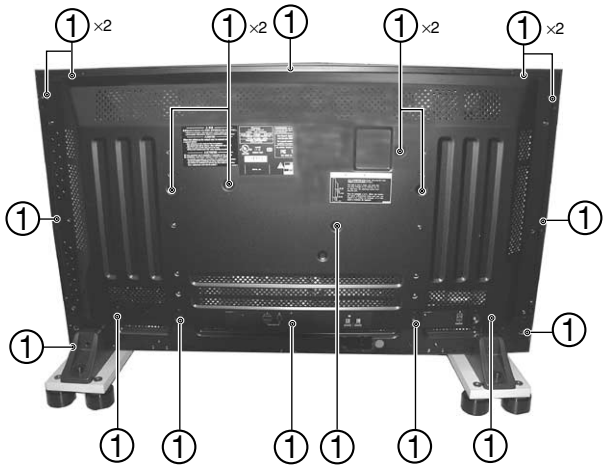
IF the detect switch has Activated

If the detect switch activates, the front panel LED flashes by a 300msec period. To release the detect mode cover the switch with tape then Press the "**MENU**" key, "**ENTER**" key, "**POWER**" key in that order with the remote control unit.

This unit powers on and enters the service factory mode screen. Afterwards, turn off the power with the remote control unit.
Perform the normal operation afterward.

SW Power Supply Module

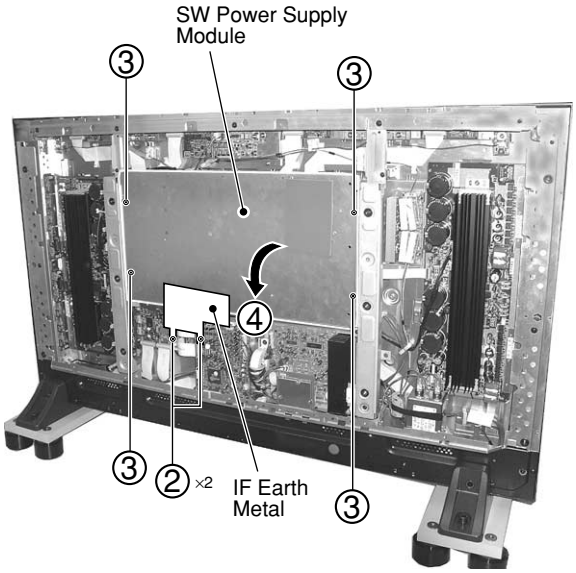
① Remove the Rear Case (P).(Screws × 19)



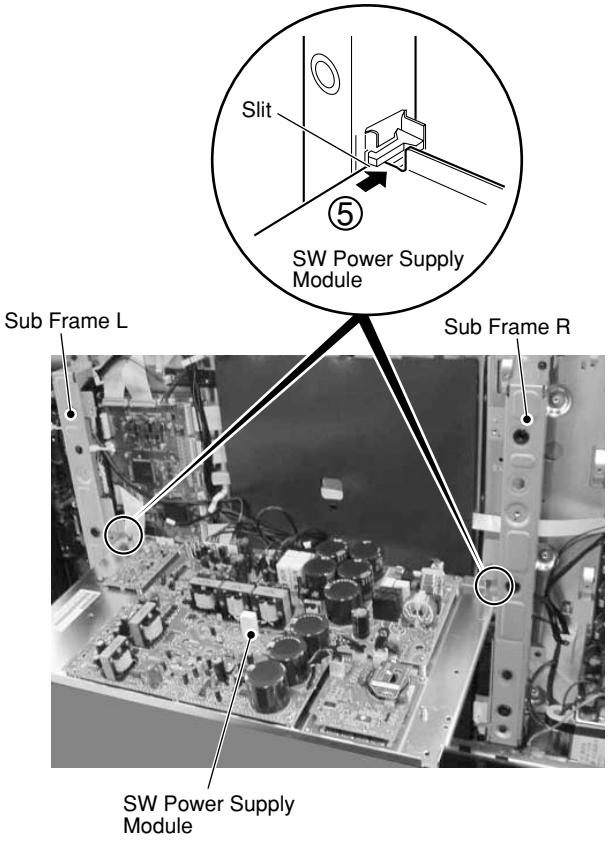
② Remove the IF Earth Metal.(Screws × 2)

③ Remove four screws.

④ Remove the SW Power Supply Module.



⑤ Insert the SW Power Supply Module into the slit of Sub Frame L and R.



Diagnosis

MR INTERFACE, AUDIO AMP SP TERMINAL and DIGITAL VIDEO Assys

① Remove the Rear Case (P). (Screws × 19)

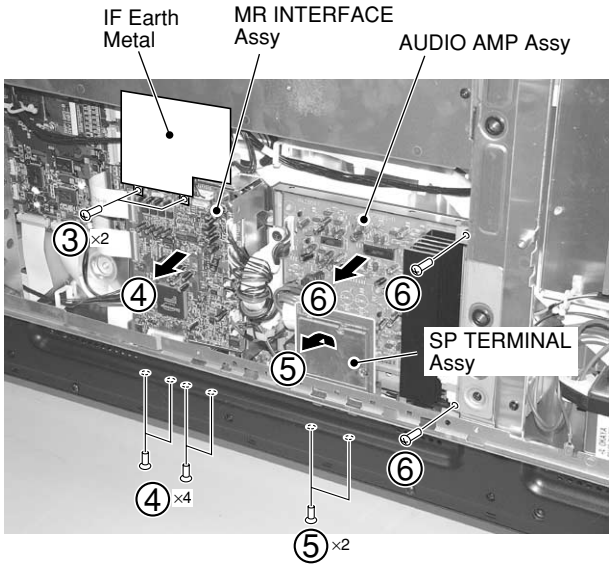
② Remove the SW Power Supply Module. (Connector, Screws × 4)

③ Remove the IF Earth Metal (Screws × 2)

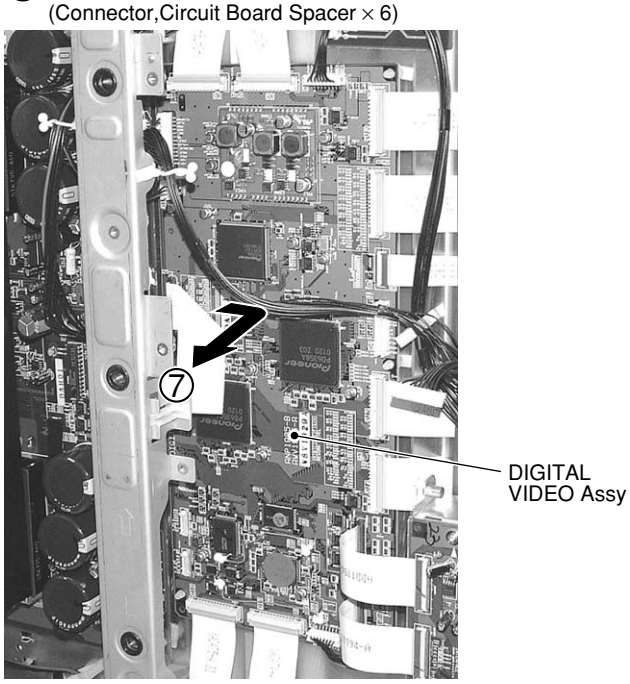
④ Remove the MR INTERFACE Assy (Connector, Screws × 4)

⑤ Remove the SP TERMINAL Assy (Connector, Screws × 2)

⑥ Remove the AUDIO AMP Assy (Connector, Screws × 2)

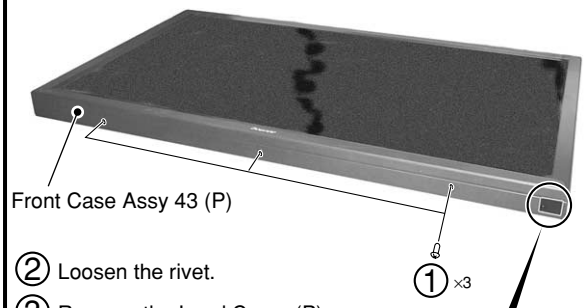


⑦ Remove the DIGITAL VIDEO Assy (Connector,Circuit Board Spacer × 6)



Y DRIVE, SCAN (A), (B) Assy

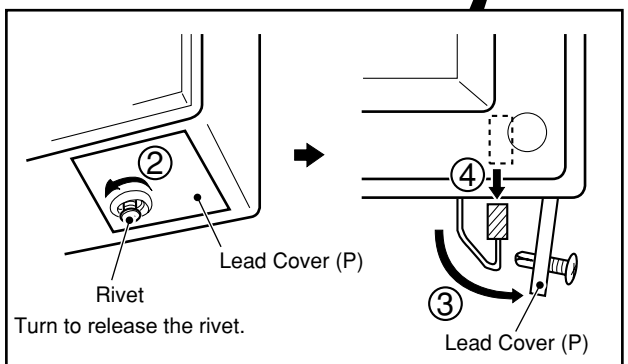
① Remove the three screws.



② Loosen the rivet.

③ Remove the Lead Cover (P).

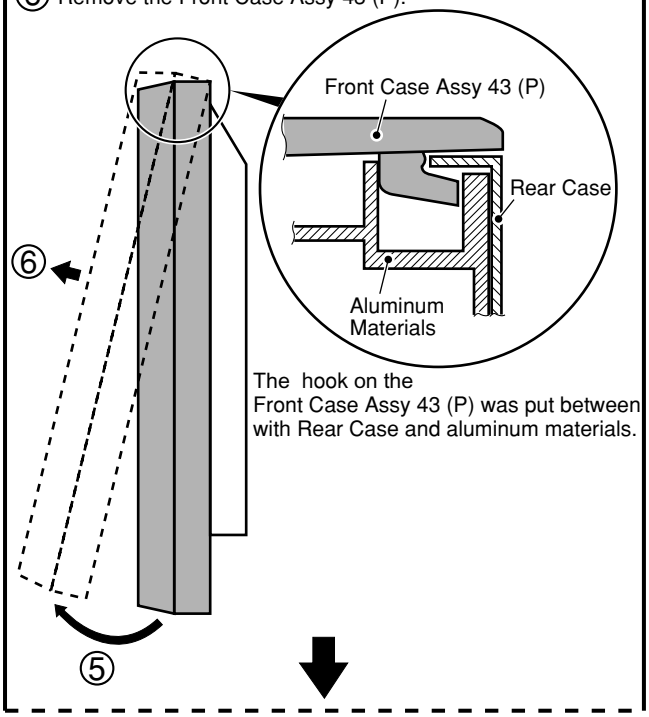
④ Pull out Flexible Cable.



To remove, pull out
the Lead Cover (P) with the rivet
before completely removing the rivet.

⑤ Remove bottom by the fulcrum at the top of Front Case Assy 43 (P).

⑥ Remove the Front Case Assy 43 (P).



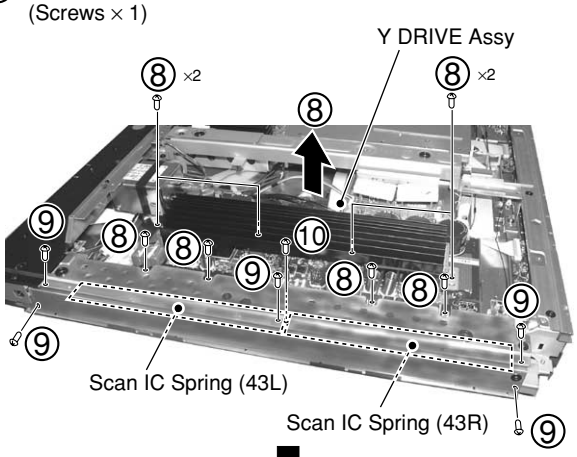
The hook on the
Front Case Assy 43 (P) was put between
with Rear Case and aluminum materials.

⑦ Remove the Rear Case (P). (Screws × 19)

⑧ Remove the Y DRIVE Assy.
(Connector, PCB Spacer × 3, Screws × 8)

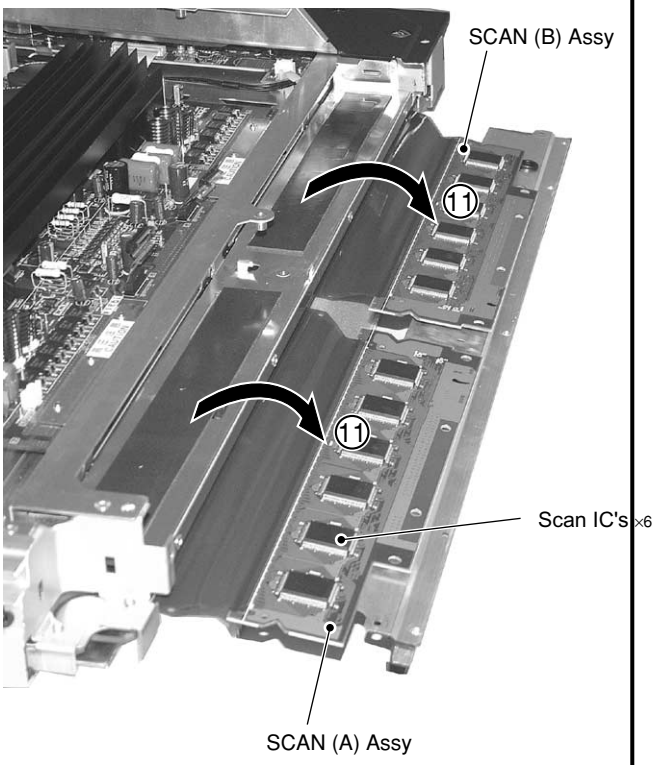
⑨ Remove the Front Chassis V. (Screws × 5)

⑩ Remove the Scan IC Spring (43L) and (43R).
(Screws × 1)



⑪ Flip over the SCAN (A) and SCAN (B) Assemblies.

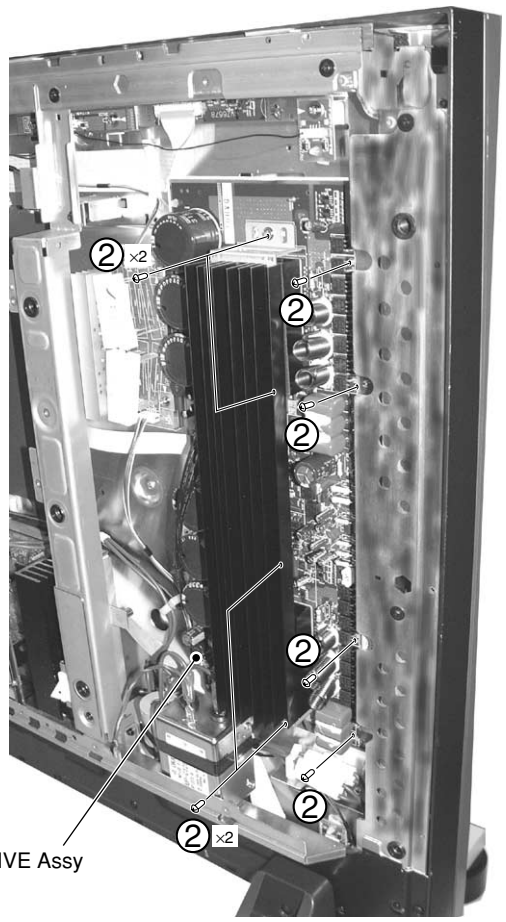
⑫ If defective replace the scan IC's.



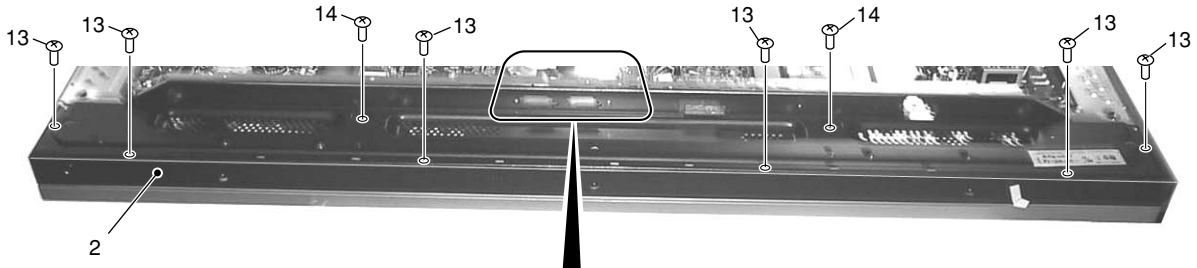
X DRIVE Assy

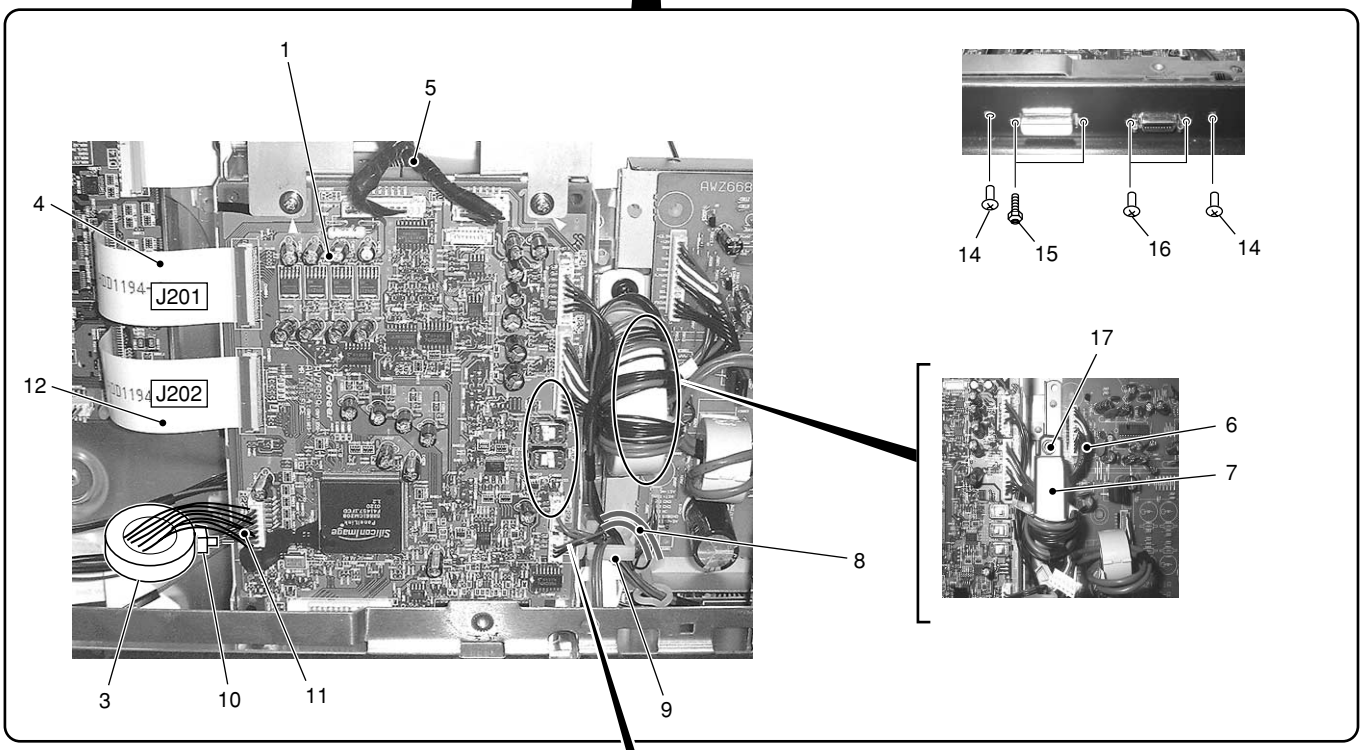
① Remove the Rear Case (P). (Screws × 19)

② Remove the X DRIVE Assy.
(Connector, PCB Spacer × 3, Screws × 8)



UPPER LAYER SECTION (1)



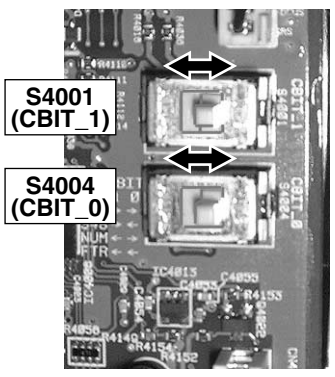


Caution in the MR INTERFACE Assy Replacement

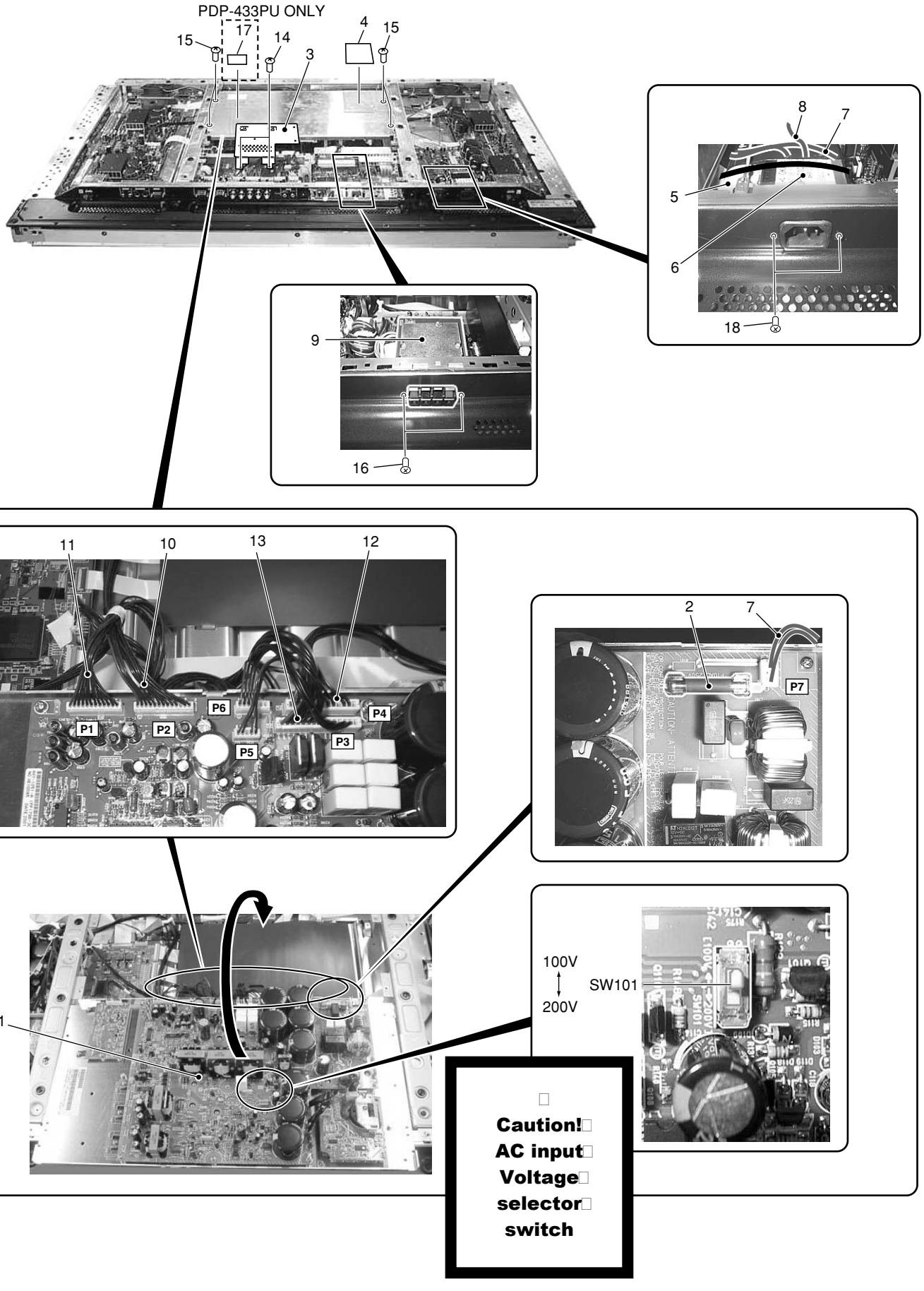
Set the slide switches in accordance with model chart when replacing the MR INTERFACE Assy.

	S4001 CBIT_1	**S4004** CBIT_0
PDP-4333P	→	→
PDP-433PE	←	→
PDP-433PU	→	→

Note 1: When there is not S4004, set only S4001.
Note 2: When there are not S4001 and S4004, setting is unnecessary.



UPPER LAYER SECTION (2)



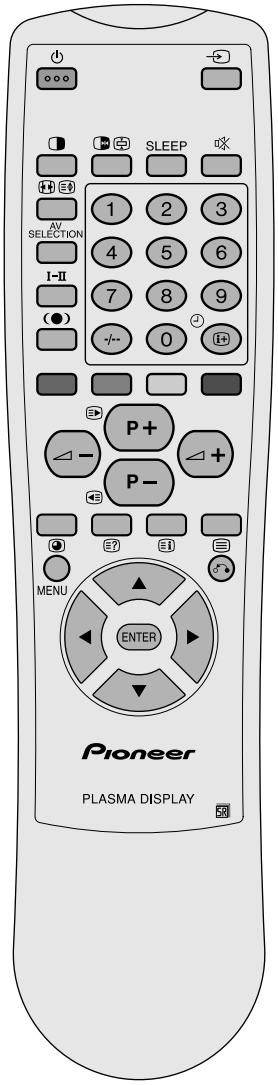
ADJUSTMENT
SERVICE FACTORY MODE

Service factory mode uses an OSD function of the Media Receiver (PDP-R03E or PDP-R03U).
Perform adjustments with the Media Receiver connected to the system.

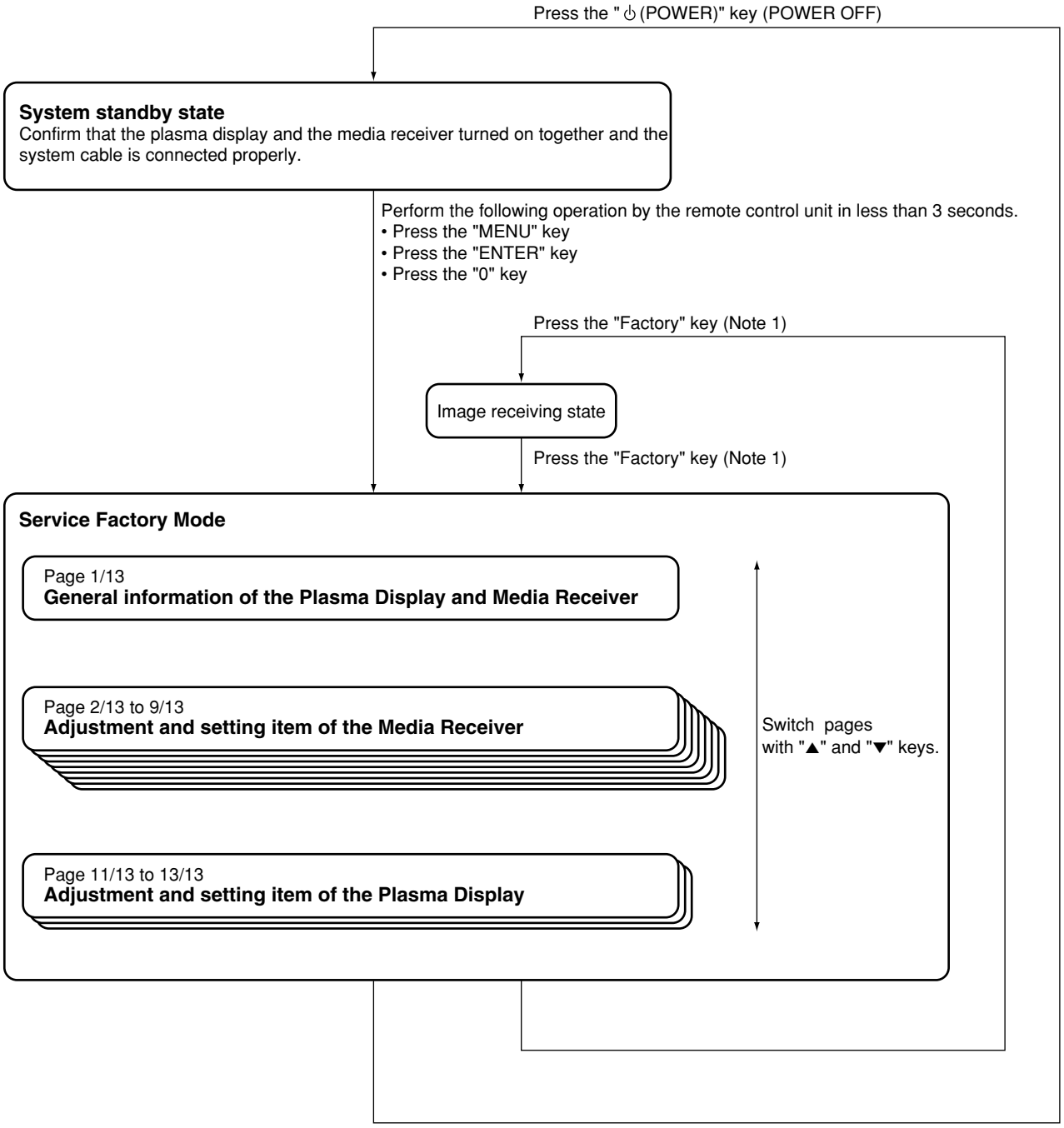
Remote Control Unit Operation in The Service Factory Mode

Operate the service factory mode with the remote control unit (AXD1463 or AXD1460) .
Please perform the adjustment by operating the following keys.

Remote Control Key	Function
P + key	One line moves the selection cursor of the adjustment item up.
P – key	One line moves the selection cursor of the adjustment item down.
VOL ◿ + key	+1 raises a adjustment value
VOL ◿ – key	–1 reduces a adjustment value
▲ key	Perform page down (previous page)
▼ key	Perform page up (next page)
◄ key	–10 reduces a adjustment value
► key	+10 raises a adjustment value



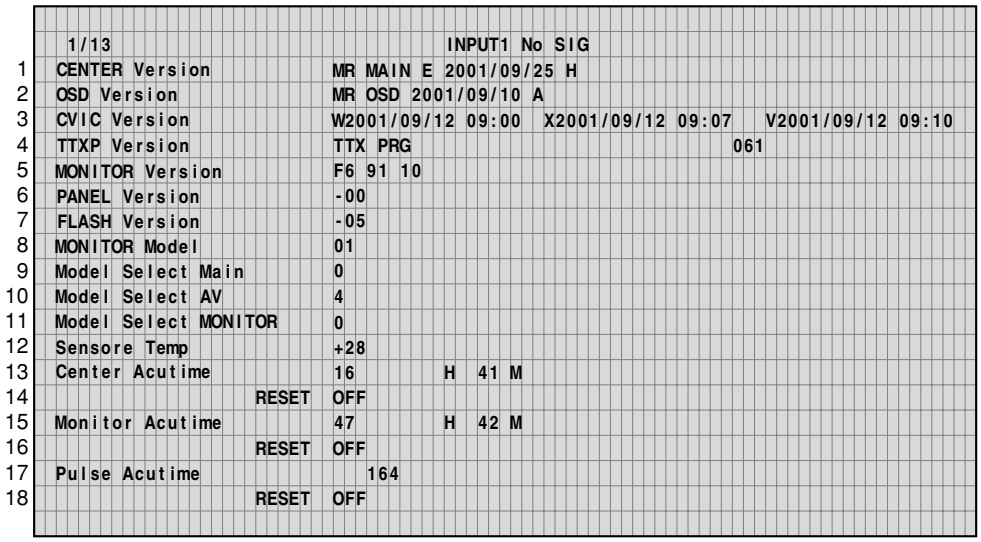
How to Enter the Service Factory Mode


Press the " ⏻ (POWER)" key (POWER OFF)
System standby state
Confirm that the plasma display and the media receiver turned on together and the system cable is connected properly.
Perform the following operation by the remote control unit in less than 3 seconds.
• Press the "MENU" key
• Press the "ENTER" key
• Press the "0" key
Press the "Factory" key (Note 1)
Image receiving state
Press the "Factory" key (Note 1)
Service Factory Mode
Page 1/13
General information of the Plasma Display and Media Receiver
Page 2/13 to 9/13
Adjustment and setting item of the Media Receiver
Page 11/13 to 13/13
Adjustment and setting item of the Plasma Display
Switch pages
with "▲" and "▼" keys.

Note 1: When using remote control with a {AA5F code} Factory Key

General Information of the Plasma Display and Media Receiver

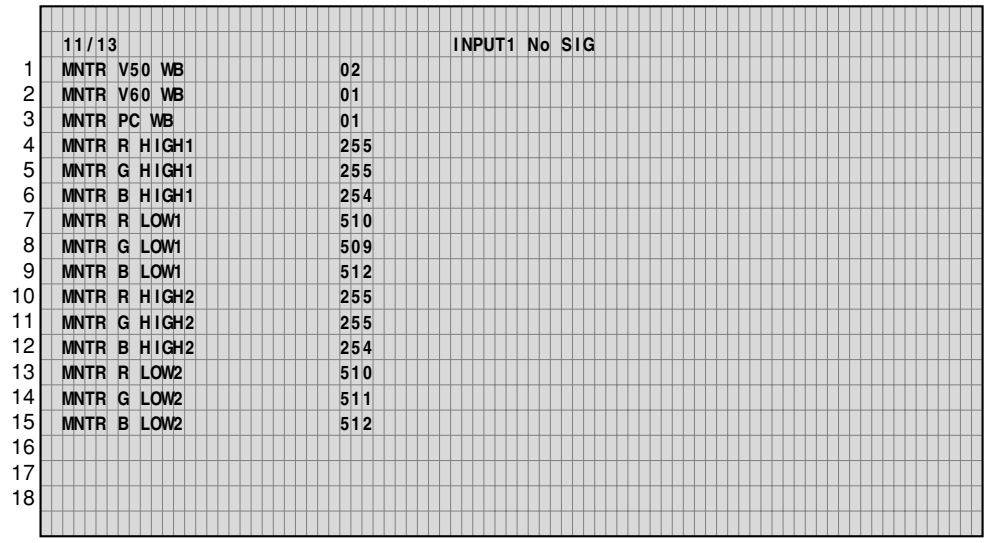
Display example of the first page


1/13
INPUT1 No SIG
1 CENTER Version MR MAIN E 2001/09/25 H
2 OSD Version MR OSD 2001/09/10 A
3 CVIC Version W2001/09/12 09:00 X2001/09/12 09:07 V2001/09/12 09:10
4 TTXP Version TTX PRG 061
5 MONITOR Version F6 91 10
6 PANEL Version -00
7 FLASH Version -05
8 MONITOR Model 01
9 Model Select Main 0
10 Model Select AV 4
11 Model Select MONITOR 0
12 Sensore Temp +28
13 Center Acutime 16 H 41 M
14 RESET OFF
15 Monitor Acutime 47 H 42 M
16 RESET OFF
17 Pulse Acutime 164
18 RESET OFF

No.	Item	Explanation
1	Main software version information of the media receiver	
2	OSD version information of the media receiver	
3	IP/resize IC control software version information of the media receiver	
4	Text microcomputer software version information of the media receiver	
5	Module microcomputer software version information of the PDP	
6	Panel microcomputer version information of the PDP	Reference
7	Panel flash ROM version information of the PDP	
8	PDP model information	01: PIONEER 50 inches, 02: PIONEER 43 inches, 11: SHARP 50 inches, 12: SHARP 43 inches
9	Media receiver model information	
10	Media receiver model information	
11	PDP destination information	0: All SHARP destinations, Japanese and North America destinations of PIONEER, 3: European and general destinations of PIONEER
12	Temperature information of panel temperature sensor on the PDP	This is internal temperature information. This is not establishment environment temperature.
13	Media receiver accumulation operating time	
14	Media receiver accumulation operating time reset	Turn the display to [ON] by pressing the "VOL +" key, then it becomes [0H] when pressing the "ENTER" key.
15	PDP accumulation operating time	
16	PDP accumulation operating time reset	Turn the display to [ON] by pressing the "VOL +" key, then it becomes [0H] when pressing the "ENTER" key.
17	PDP accumulation pulse number	Real accumulation pulse number becomes "indicated value *10,000,000 pulse".
18	PDP accumulation pulse number reset	Turn the display to [ON] by pressing the "VOL +" key, then it becomes [0] when pressing the "ENTER" key.

Adjustment and Setting Item of the Plasma Display

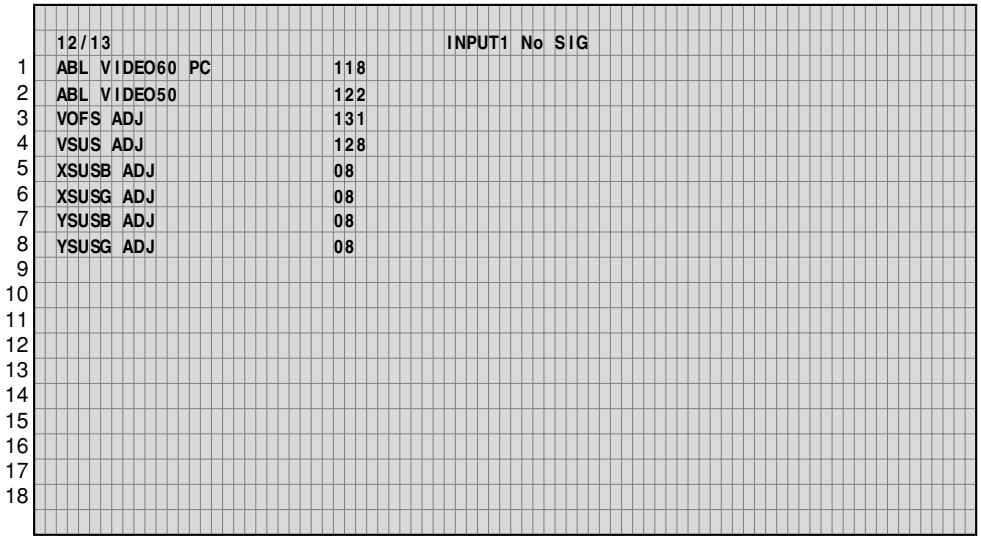
Display example of the eleventh page


11/13
INPUT1 No SIG
1 MNTR V50 WB 02
2 MNTR V60 WB 01
3 MNTR PC WB 01
4 MNTR R HIGH1 255
5 MNTR G HIGH1 255
6 MNTR B HIGH1 254
7 MNTR R LOW1 510
8 MNTR G LOW1 509
9 MNTR B LOW1 512
10 MNTR R HIGH2 255
11 MNTR G HIGH2 255
12 MNTR B HIGH2 254
13 MNTR R LOW2 510
14 MNTR G LOW2 511
15 MNTR B LOW2 512
16
17
18

No.	Item	Adjustable Range	Shipping Setting	Storage Place
1	PDP_W/B table selection at VIDEO 50Hz	1 or 2	2	PDP
2	PDP_W/B table selection at VIDEO 60Hz	1 or 2	1	PDP
3	PDP_W/B table selection at PC	1 or 2	1	PDP
4	RED_GAIN of PDP_W/B table 1	0 to 255	Factory adjustment value	PDP
5	GREEN_GAIN of PDP_W/B table 1	0 to 255	Factory adjustment value	PDP
6	BLUE_GAIN of PDP_W/B table 1	0 to 255	Factory adjustment value	PDP
7	RED_OFS of PDP_W/B table 1	0 to 999	Factory adjustment value	PDP
8	GREEN_OFS of PDP_W/B table 1	0 to 999	Factory adjustment value	PDP
9	BLUE_OFS of PDP_W/B table 1	0 to 999	Factory adjustment value	PDP
10	RED_GAIN of PDP_W/B table 2	0 to 255	Factory adjustment value	PDP
11	GREEN_GAIN of PDP_W/B table 2	0 to 255	Factory adjustment value	PDP
12	BLUE_GAIN of PDP_W/B table 2	0 to 255	Factory adjustment value	PDP
13	RED_OFS of PDP_W/B table 2	0 to 999	Factory adjustment value	PDP
14	GREEN_OFS of PDP_W/B table 2	0 to 999	Factory adjustment value	PDP
15	BLUE_OFS of PDP_W/B table 2	0 to 999	Factory adjustment value	PDP

Caution in the PDP W/B (No.4 to 15) adjustment:
Adjustment value is reflected without relation in input signal during adjustment to the actual PDP.
For example, when operate a adjustment value of [MNTR HIGH1] during PAL input, switch to the adjustment value operation of W/B table 1 while displaying PAL in the actual PDP.
This is temporary.
After adjustment, it becomes the W/B table 2 operation in the PAL input after restarted in the normal mode. It becomes an operation of the W/B table 1 adjustment value after adjustment in the NTSC input.
As for the above example, table selection (No. 1 and 2) becomes the shipping setting.

Display example of the twelfth page

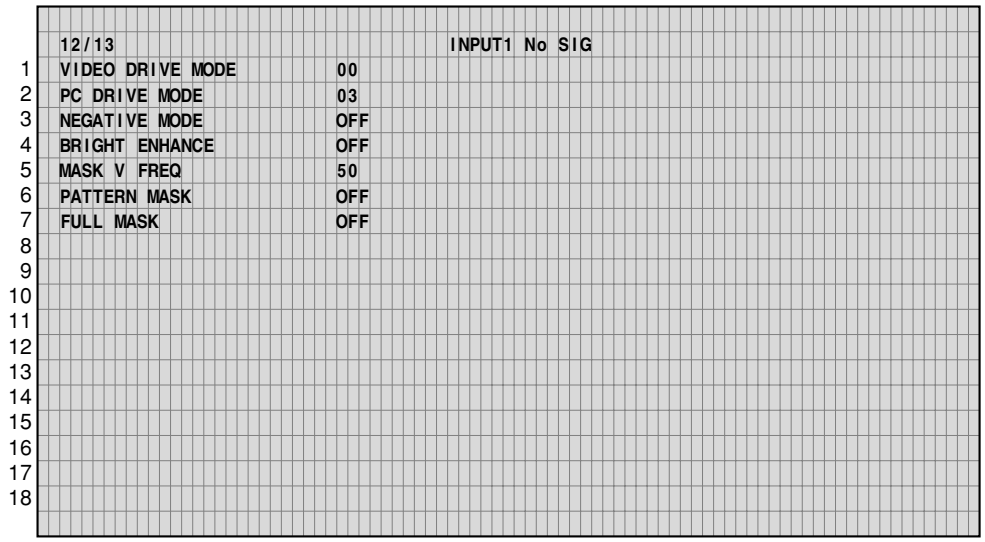


No.	Item	Adjustable Range	Shipping Setting	Storage Place
1	Electric power setting at the PC, VIDEO 60Hz	0 to 255	Factory adjustment value	PDP
2	Electric power setting at VIDEO 50Hz	0 to 255	Factory adjustment value	PDP
3	VOFS voltage setting	0 to 255	Factory adjustment value	PDP
4	VSUS voltage setting	0 to 255	Factory adjustment value	PDP
5	SUS_B timing setting of X drive	0 to 15	Factory adjustment value	PDP
6	SUS_G timing setting of X drive	0 to 15	Factory adjustment value	PDP
7	SUS_B timing setting of Y drive	0 to 15	Factory adjustment value	PDP
8	SUS_G timing setting of Y drive	0 to 15	Factory adjustment value	PDP

Adjustment of these items could result in damage if improperly adjusted. When adjustment is needed, be careful.

Caution in the electric power setting (No. 1 and 2) adjustment:
Adjustment value is reflected without relation in input signal during adjustment to the actual PDP.
For example, when operate a adjustment value of [ABL VIDEO 60 PC] during PAL input, switch to the adjustment value operation of [ABL VIDEO 60 PC] while displaying PAL in the actual PDP. This is temporary.
After adjustment, it becomes the [ABL VIDEO 50] operation in the PAL input after restarted in the normal mode. It becomes an operation of the [ABL VIDEO 60PC] adjustment value after adjustment in the NTSC input.

Display example of the thirteenth page



No.	Item	Adjustable Range	Shipping Setting	Storage Place
1	Drive mode selection at VIDEO	0 to 5	0	PDP
2	Drive mode selection at PC	0 to 5	3	PDP
3	Negative positive inversion mode	OFF/ON	OFF	PDP
4	Bright enhance	OFF/ON	OFF	None
5	Refresh rate at mask signal generation	50/60/70	–	None
6	Pattern mask signal generation	OFF/	OFF	PDP
7	Full mask signal generation	OFF/	OFF	PDP

Caution in the mask (generation test signal screen in the PDP inside) signal generation:

- A pattern mask and a full mask can use only either.
  Therefore, turn full mask OFF when using a pattern mask. Also turn pattern mask OFF when using a full mask.
- A pattern mask and a full mask are test signal screens occurring together in the PDP inside. Therefore, in the mask signal generation, it cannot acept video inputting from OSD and the outside.
  When release mask setting or change of each setting or perform the confirmation of the adjustment or external input signal, perform key operation of the main unit button or the remote control unit.

ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

SW POWER SUPPLY Module

When replaced

No adjustment required.

DIGITAL VIDEO Assy

When repaired

No adjustment required.

When replaced

• Remove IC1204 (24LC04(1) SN-TBB) from the former PC Board to replace, and install it to the new PC Board.

MR INTERFACE Assy

1. Remove IC4201 from the former PC Board to replace, and install it to the new PC Board.
2. Set slide SW according to page in this manual or page 22 in the service manual.

Y DRIVE Assy

When repaired

1. VOFS/VH/IC5V voltage adjustment
2. Timing adjustment of pulse module

When replaced

1. SUSB ground timing adjustment
2. Panel white balance adjustment

X DRIVE Assy

When repaired

1. VRN voltage adjustment
2. Timing adjustment of pulse module

When replaced

1. SUSB ground timing adjustment
2. Panel white balance adjustment

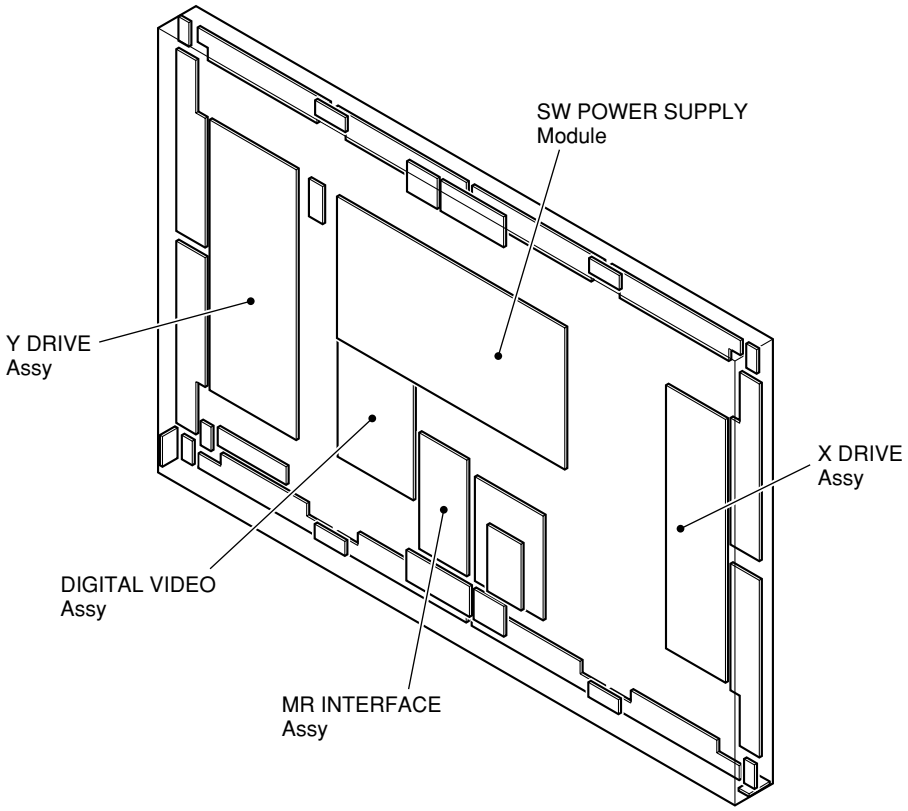


Fig. 1 PC Board Location (rear side view)

ADJUSTMENT

VOFS/VH/IC5V Voltage Adjustment

<table>
<tr><th>Input Signal</th><th>Adjusting Point</th><th>Adjusting Method</th></tr>
<tr><td rowspan="4">White 100%</td><td>VR2701 (VOFS)
(Y DRIVE Assy)</td><td>VOFS (Offset voltage) adjustment
Method 1
1. Write down a adjustment value of VOFS ADJ in the factory mode.
2. Set this adjustment value to center (128).
3. Adjust VR2701 so that the voltage between K2701 (VOFS) and K2703 (SUS GND) becomes 45V.
4. Return it to the value that wrote down a adjustment value of V-OFFSET in step 1.

Method 2
1. Read the adjustment value of VOFS ADJ in the factory mode.
2. Adjust VR2701 so that the voltage between K2710 (VOFS) and K2703 (SUS GND) becomes following voltage ± 0.5V.

<table>
<tr><th>Input Command</th><th>DAC Output</th><th>Setting Voltage</th><th>Input Command</th><th>DAC Output</th><th>Setting Voltage</th></tr>
<tr><td>VOF000</td><td>0.4</td><td>25</td><td>VOF134</td><td>2.599212598</td><td>45.94488</td></tr>
<tr><td>VOF006</td><td>0.4984375</td><td>25.9375</td><td>VOF141</td><td>2.71496063</td><td>47.04724</td></tr>
<tr><td>VOF013</td><td>0.61328125</td><td>27.03125</td><td>VOF147</td><td>2.814173228</td><td>47.99213</td></tr>
<tr><td>VOF019</td><td>0.71171875</td><td>27.96875</td><td>VOF153</td><td>2.913385827</td><td>48.93701</td></tr>
<tr><td>VOF026</td><td>0.8265625</td><td>29.0625</td><td>VOF160</td><td>3.029133858</td><td>50.03937</td></tr>
<tr><td>VOF032</td><td>0.925</td><td>30</td><td>VOF166</td><td>3.128346457</td><td>50.98425</td></tr>
<tr><td>VOF038</td><td>1.0234375</td><td>30.9375</td><td>VOF172</td><td>3.227559055</td><td>51.92913</td></tr>
<tr><td>VOF045</td><td>1.13828125</td><td>32.03125</td><td>VOF179</td><td>3.343307087</td><td>53.0315</td></tr>
<tr><td>VOF051</td><td>1.23671875</td><td>32.96875</td><td>VOF185</td><td>3.442519685</td><td>53.97638</td></tr>
<tr><td>VOF058</td><td>1.3515625</td><td>34.0625</td><td>VOF191</td><td>3.541732283</td><td>54.92126</td></tr>
<tr><td>VOF064</td><td>1.45</td><td>35</td><td>VOF198</td><td>3.657480315</td><td>56.02362</td></tr>
<tr><td>VOF070</td><td>1.5484375</td><td>35.9375</td><td>VOF204</td><td>3.756692913</td><td>56.9685</td></tr>
<tr><td>VOF077</td><td>1.66328125</td><td>37.03125</td><td>VOF211</td><td>3.872440945</td><td>58.07087</td></tr>
<tr><td>VOF083</td><td>1.76171875</td><td>37.96875</td><td>VOF217</td><td>3.971653543</td><td>59.01575</td></tr>
<tr><td>VOF090</td><td>1.8765625</td><td>39.0625</td><td>VOF223</td><td>4.070866142</td><td>59.96063</td></tr>
<tr><td>VOF096</td><td>1.975</td><td>40</td><td>VOF230</td><td>4.186614173</td><td>61.06299</td></tr>
<tr><td>VOF102</td><td>2.0734375</td><td>40.9375</td><td>VOF236</td><td>4.285826772</td><td>62.00787</td></tr>
<tr><td>VOF109</td><td>2.18828125</td><td>42.03125</td><td>VOF242</td><td>4.38503937</td><td>62.95276</td></tr>
<tr><td>VOF115</td><td>2.28671875</td><td>42.96875</td><td>VOF249</td><td>4.500787402</td><td>64.05512</td></tr>
<tr><td>VOF122</td><td>2.4015625</td><td>44.0625</td><td>VOF255</td><td>4.6</td><td>65</td></tr>
<tr><td>VOF128</td><td>2.5</td><td>45</td><td></td><td></td><td></td></tr>
</table>
The symptom is case of mis-adjustment
If the VOFS Voltage adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.</td></tr>
<tr><td>VR2703 (VH)
(Y DRIVE Assy)</td><td>VH (voltage for scan IC) Adjustment
Adjust so that the voltage between K2716 (VH) and K2720 (PSUS) becomes 103V ± 0.5V. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.

The symptom is case of mis-adjustment
If the VH adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.</td></tr>
<tr><td>VR2702 (IC5V)
(Y DRIVE Assy)</td><td>IC5V Adjustment
Adjust so that the voltage between K2707 (IC5V) and K2720 (PSUS) becomes 5.0V ± 0.1V. PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.</td></tr>
<tr><td colspan="2">Note : Be sure to measure between specified test points.</td></tr>
</table>

Sustain Pulse Waveform Adjustment

Input Signal	Adjusting Point	Adjusting Method
White 100%	REF_DIG mode in Factory mode XSUSB ADJ YSUSB ADJ	**X-SUS-B, Y-SUS-B Adjustment** Set to the indicated value with the remote control unit. (Refer to "Timing adjustment of control signal of X and Y Drive Assys".)

VRN Voltage Adjustment

Input Signal	Adjusting Point	Adjusting Method
White 100%	VR3701 (VRN) (X DRIVE Assy)	**VRN (minus reset voltage adjustment)** Adjust so that the voltage between K3707 (VRN) and K3702 (SUS-GND) becomes -280V ± 1.0V.

Panel White Balance Adjustment

Input Signal	Adjusting Point	Adjusting Method
		Adjust the parameter in the OFFSET-DIGITAL of factory mode as follows; PANEL R-HIGH 〜 PANEL B-LOW In this time, dispay uses the mask (MASK04) of factory mode. Reference : Adjustment values using the Media color-difference meter (A-100)

	MASK Left Side	MASK Right Side
x	294	293
y	303	294

* When performing the various adjustments by RS-232C control, execute a "DM0" command (release the limit of pulse number) beforehand.
  After the adjustment completion, execute a "DM 3" command (Limit of pulse number: 64%, shipping state)

Timing Adjustment of X and Y DRIVE Assys Control Signal

Purpose

- Pulse module loads in DRIVE Assy is one of heat measures of DRIVE Assy. Adjust the drive timing of the pulse module driving parallel with VR.
- Pulse module has each peculiar delay time. Readjustment is necessary when replacing the pulse module in the X and Y DRIVE Assys.

Adjustment Method

CR delay circuit is each inserted on signal path of four control signals (SUS-U, SUS-B, SUS-D, SUS-G) driving the pulse module.
Quantity of delay can adjust pulse module of one side with VR.
Adjust VR while measuring a waveform of the pulse module, and match timing.

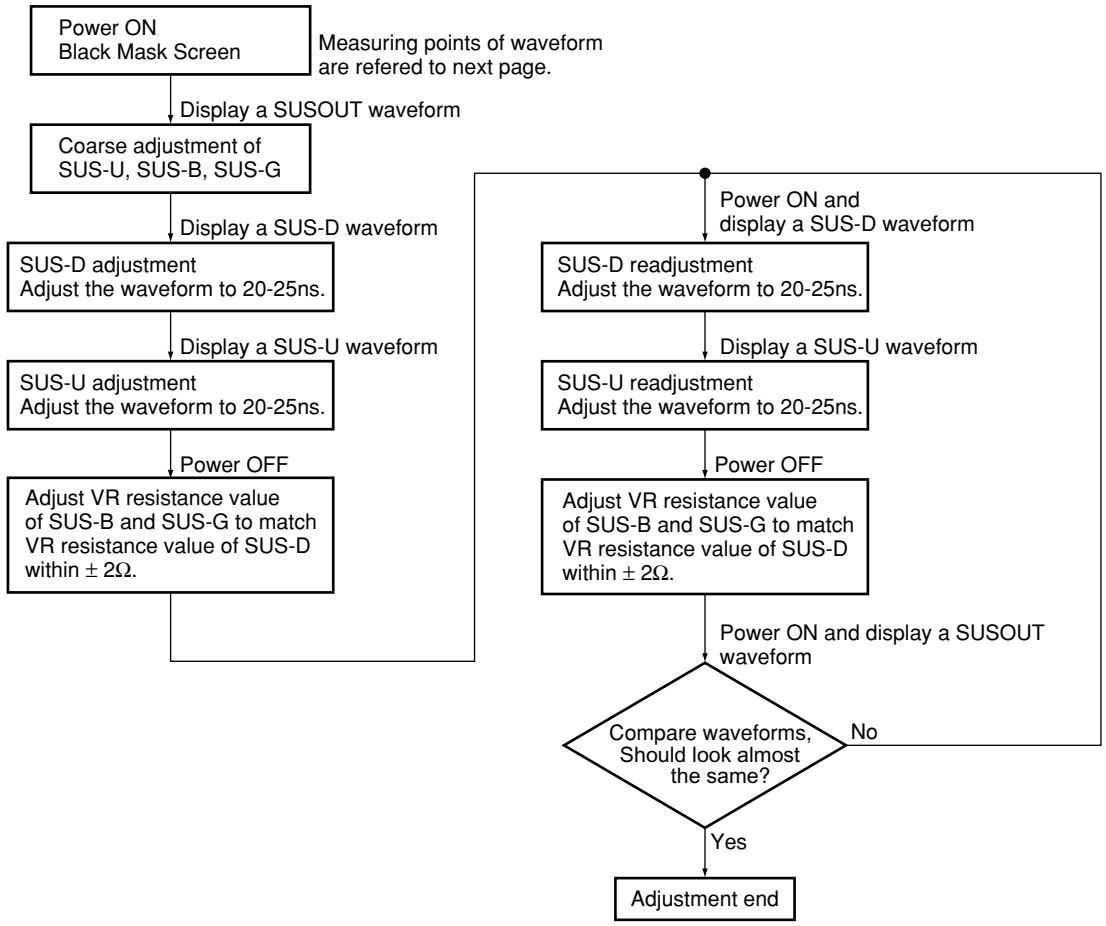
Adjustment VR

	X DRIVE	Y DRIVE
SUS-U	VR3203	VR2204
SUS-D	VR3202	VR2203
SUS-B	VR3201	VR2202
SUS-G	VR3200	VR2201

Test pin for adjustment and measurment

Pulse Module	X DRIVE		Y DRIVE	
	Upper	Lower	Upper	Lower
SUSOUT	K3105	K3106	K2212	K2203
SUS-U	K3200	K3204	K2220	K2224
SUS-D	K3108	K3205	K2207	K2225

Adjustment Procedure

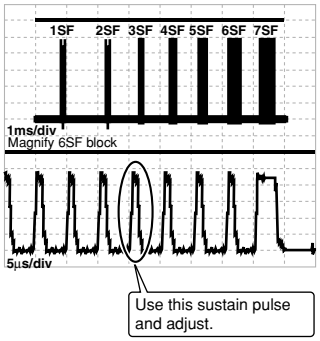

Power ON
Black Mask Screen
Measuring points of waveform are refered to next page.
Display a SUSOUT waveform
Coarse adjustment of SUS-U, SUS-B, SUS-G
Display a SUS-D waveform
SUS-D adjustment
Adjust the waveform to 20-25ns.
Display a SUS-U waveform
SUS-U adjustment
Adjust the waveform to 20-25ns.
Power OFF
Adjust VR resistance value of SUS-B and SUS-G to match VR resistance value of SUS-D within ± 2Ω.
Power ON and display a SUS-D waveform
SUS-D readjustment
Adjust the waveform to 20-25ns.
Display a SUS-U waveform
SUS-U readjustment
Adjust the waveform to 20-25ns.
Power OFF
Adjust VR resistance value of SUS-B and SUS-G to match VR resistance value of SUS-D within ± 2Ω.
Power ON and display a SUSOUT waveform
Compare waveforms, Should look almost the same?
No
Yes
Adjustment end

Measuring Waveform of Pulse Module Timing Adjustment

Timing adjustment of the pulse module control signal adjusts with the sustain pulse of eighth pulse (X DRIVE) and the ninth pulse (Y DRIVE) from the back of 6SF.

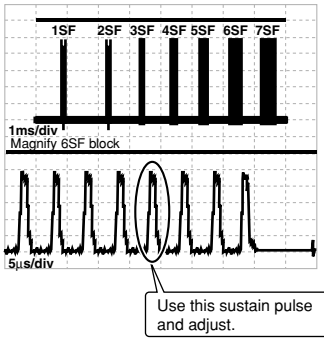
Measuring point of waveform

Y DRIVE SUSOUT waveform



CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

X DRIVE SUSOUT waveform



CH1 : X SUSOUT Under (K3106), 50V/div
CH2 : X SUSOUT Upper (K3105), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

- Perform adjustment of waveform with a black mask screen.
- It is easy to adjust when turned field AB offset to OFF (RS-232C command: OCN) in adjustment.

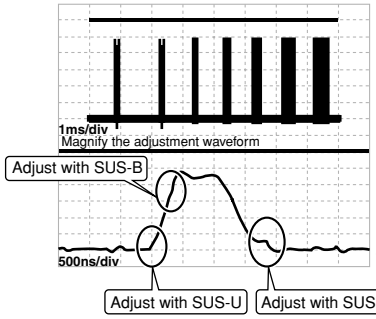
Note:
- Sampling rate of oscilloscope sets it more than 500MS/s in order to perform ns order adjustment.
- Collecting calibration of probe before adjustment.

- Connect GND of probe measuring waveform to SUSGND terminal by all means.
- Precise waveform is not displayed, and an adjustment gap may occur, make sure to GND properly.

When looking at drive Assy unit waveforms, measure at the fourth sustain pulse from the back except for a large width sustain pulse.
Therefore, when measured both waveforms of the X and Y drives together, it becomes the sustain pulse of 8 and 9 pulses from the back.

Waveform coarse adjustment

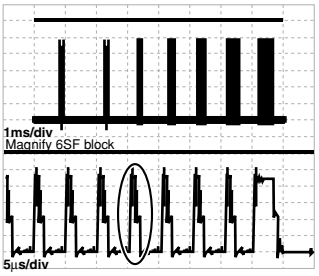
Measure the SUSOUT waveform



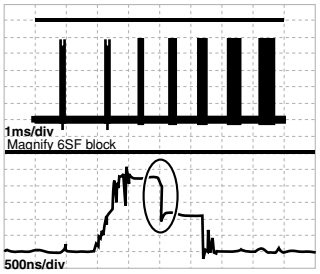
CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

When there is a gap with waveform of CH1 / CH2 of the part which is enclosed in the following circle, adjust required VR to overlap the waveforms.

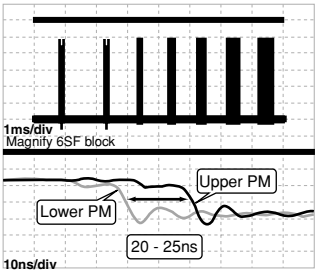
SUS-D Adjustment (Y DRIVE)



Magnification

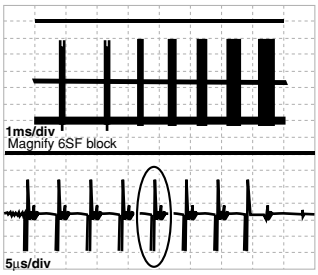


Magnification

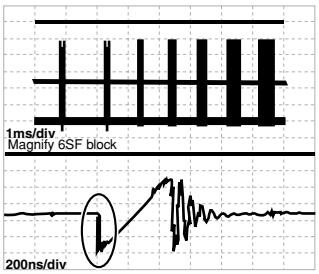


CH1 : Y SUS-D Under (K2225), 50V/div
CH2 : Y SUS-D Upper (K2207), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

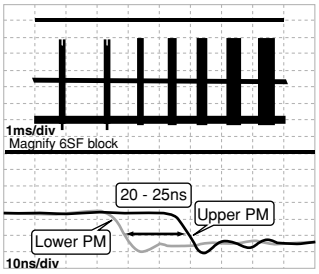
SUS-U Adjustment (Y DRIVE)



Magnification



Magnification

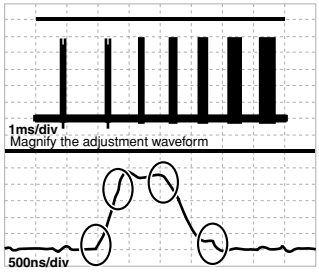


CH1 : Y SUS-U Under (K2224), 50V/div
CH2 : Y SUS-U Upper (K2220), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Caution:
Not absolutely mistaking upper and lower of waveform.

Waveform Confirmation in Adjustment completion

Measure the SUSOUT waveform



CH1 : Y SUSOUT Under (K2203), 50V/div
CH2 : Y SUSOUT Upper (K2212), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Confirm it to waveform of CH1 / CH2 of the part which enclosed in the following circle whether there is not a large gap.
(A gap of the quantity that shifts 20nS and adjusted remains.)

When adjust in the power supply ON state, change so that the quantity of gap that adjusted by temperature-rise of the pulse module becomes small.
Therefore, perform high power OFF (RS-232C command: DRF) except measurement time of waveform when adjusts, and adjustment error by temperature-rise does not occur.

SUS-B Ground Timing Adjustment

It is necessary to adjust when replacing the X or Y DRIVE Assy and the pulse module.

Measurement point and method

Measurement point of waveform of X and Y DRIVE Assy in timing adjustment is test pin of SUSOUT of the pulse module of bottom of the main unit.
X DRIVE Assy : K3106 Y DRIVE Assy : K2203
Measurement screen : Black mask (PC 60Hz)

The measurement is easy to perform when turns field AB alternation to OFF. (RS-232C command: OCN)

Measure a sustain pulse of the fifth pulse (X DRIVE) and the fifth pulse (Y DRIVE) from the back of the fourth FS, and adjust. In the start section of this sustain pulse, waveform has inflection point with the timing when SUS-B becomes ON. Adjust so that the voltage of this inflection point is the nearest to 140V and do not become less than 140V.

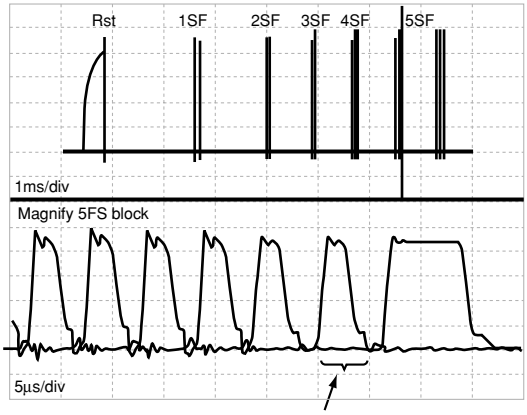
Adjustment parameter

X DRIVE: XSUSB (RS-232C command : XSB)
Y DRIVE: YSUSB (RS-232C command : YSB)

Note:

• Connect GND of probe measuring waveform to SUSGND terminal by all means.
• Precise waveform is not displayed, and an adjustment gap may occur that does not collect GND properly.

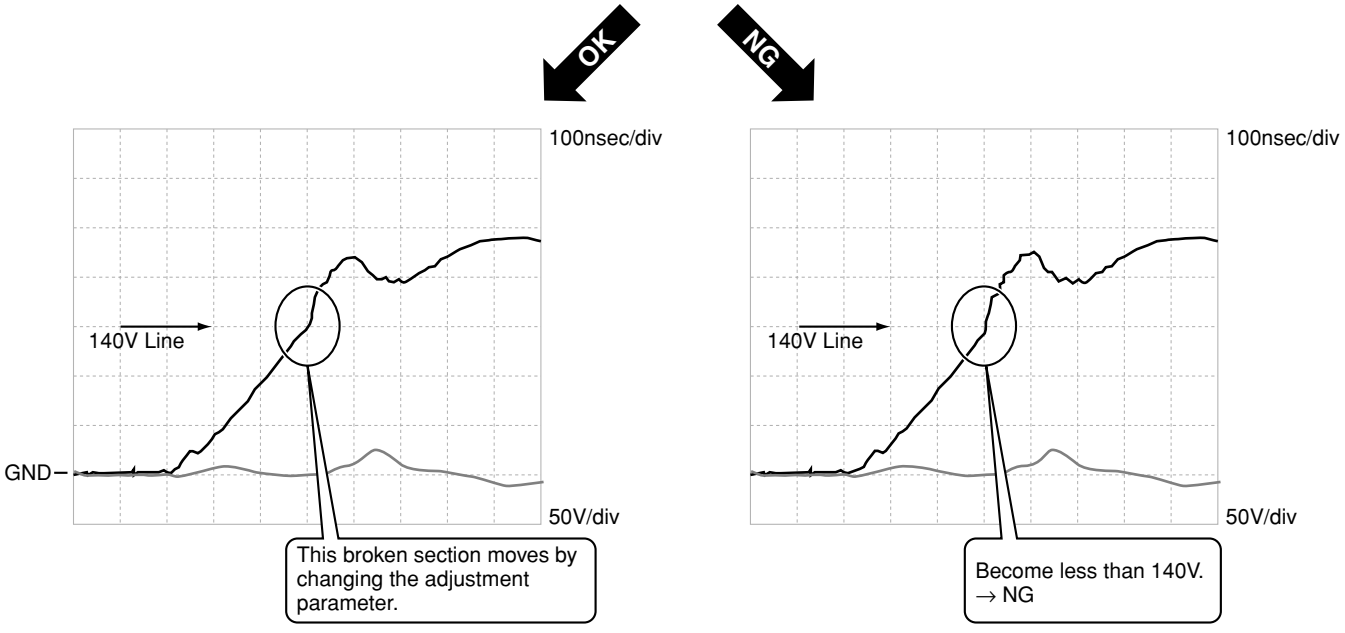
Waveform in the measurement



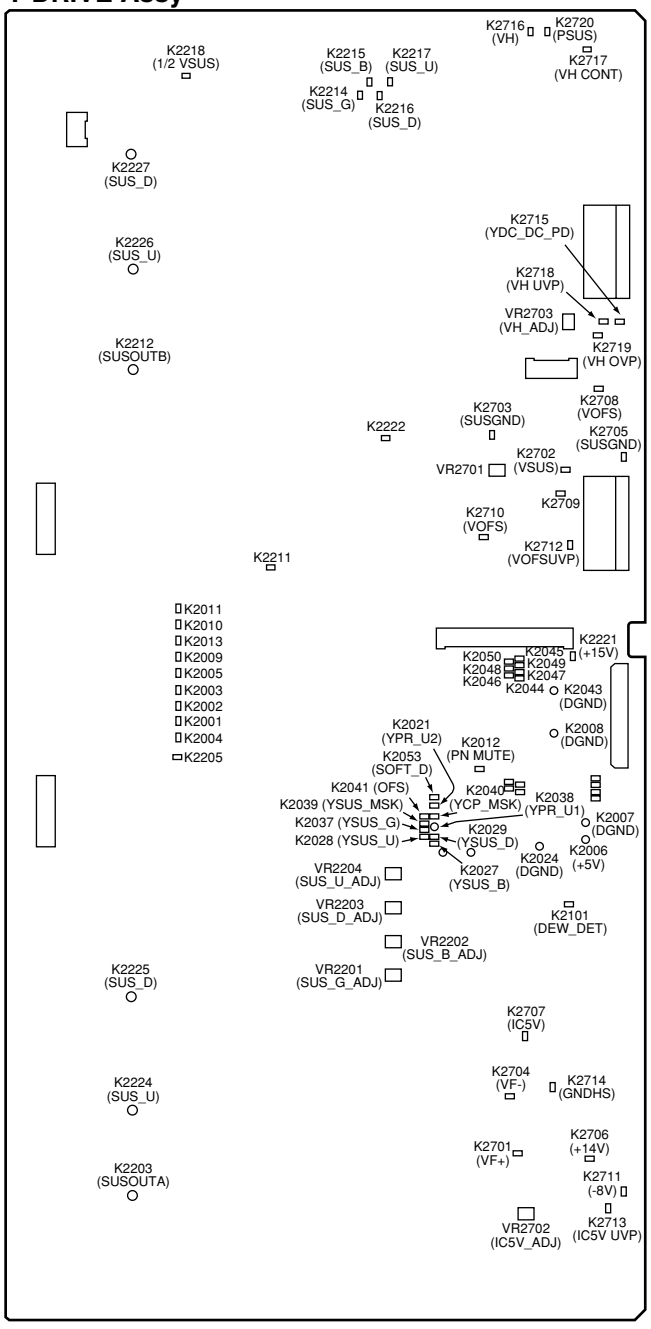
CH1 : Y SUSOUT (K2203), 50V/div
CH2 : X SUSOUT (K3106), 50V/div
CH4 : YPR-U1 (K2038)- Trigger, 5V/div
Trigger : 2msec delay

Measure a waveform of this section and adjust.

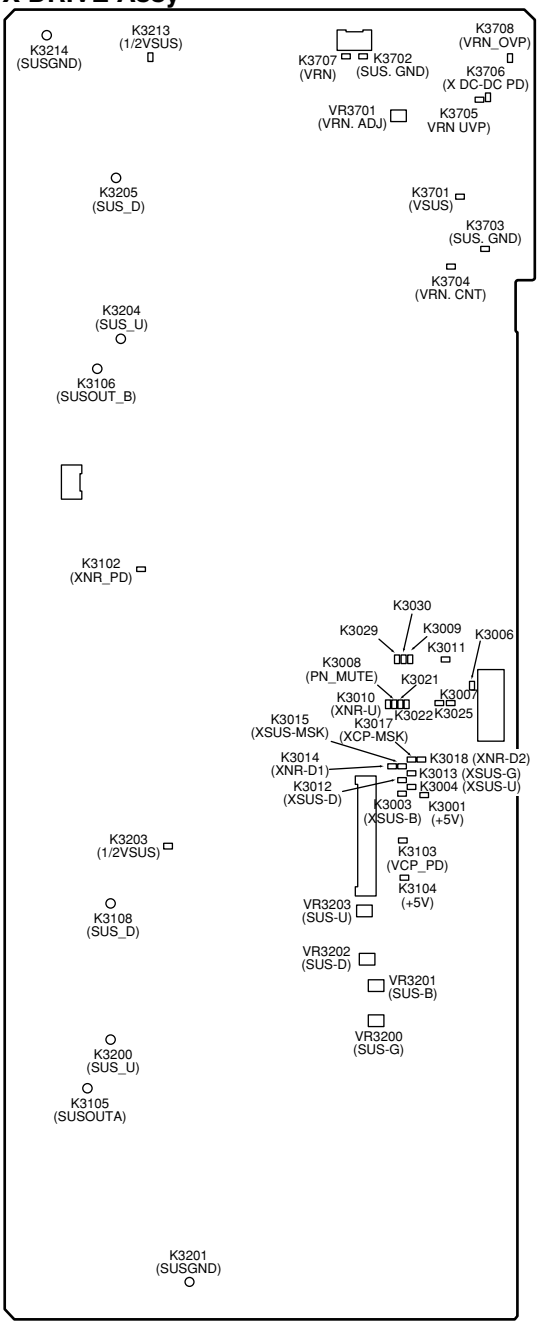
Magnify the fourth pulse sustain pulse (XSUSOUT waveform) from the back of the above waveform.



Y DRIVE Assy



X DRIVE Assy



Adjusting Points

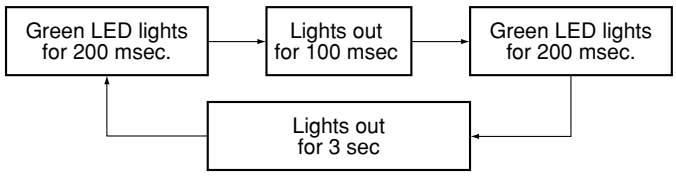
SHUT DOWN/POWER DOWN DIAGNOSIS BY LED DISPLAY

When internal circuit abnormality and other operation abnormality occurred from this unit, self-diagnose display function by STANDBY/ON (LED) indicator is loaded.
Each NG point by LED blinking and a PD (power down) point are as follows.

Shut Down

• Operations : When a microcomputer detected abnormality, turn the power supply to OFF.
• LED display : Green blinks

Examples: LED blinks in the DIGITAL-IIC communication NG



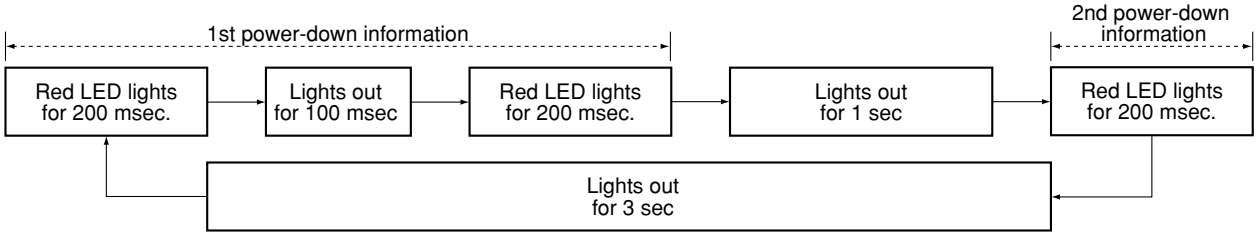
Number of blinks	Name
1	Panel Microcomputer NG
2	DIGITAL-IIC communication NG
3	Dew abnormality
4	Temperature abnormality

How to release the shut down state
Turn the power supply ON by remote control , release from the shut down state, and turn the power supply ON.
(It is not necessary to turn the AC power OFF.)

Power Down

• Operations : When this unit enters the power down state, the power supply shuts OFF by the protection circuit.
• LED display : Red blinks
* When more than one protection circuit activates, display shows LED's in order to 1st - 2nd.

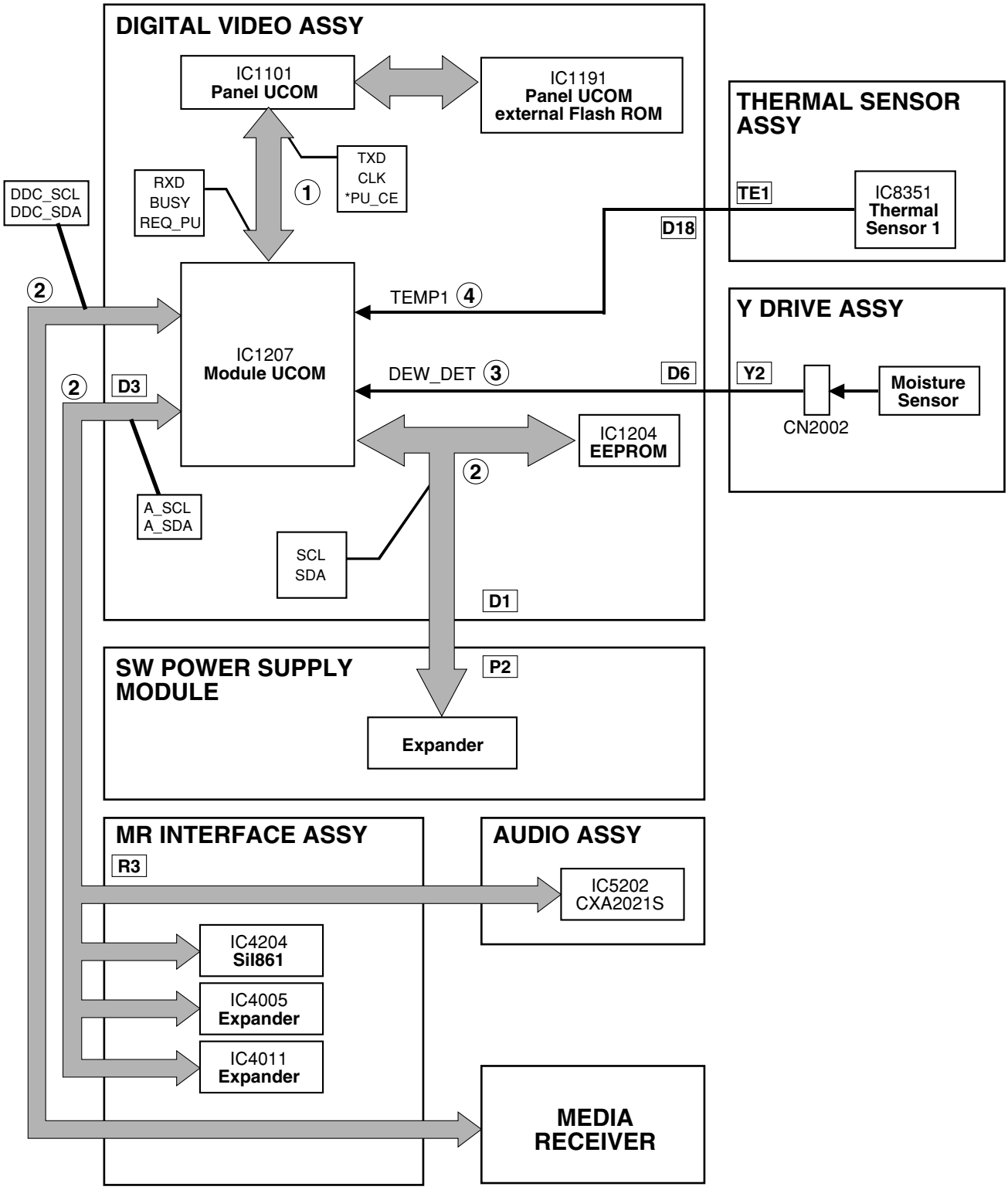
Examples: LED blinks in the 1st power down = Y-DC/DC CONVERTER, 2nd power down = Y-DRIVE


1st power-down information
2nd power-down information
Red LED lights for 200 msec.
Lights out for 100 msec
Red LED lights for 200 msec.
Lights out for 1 sec
Red LED lights for 200 msec.
Lights out for 3 sec

Number of blinks	Name
1	Y-DRIVE
2	Y-DC/DC CONVERTER
3	X-DC/DC CONVERTER
4	X-DRIVE
5	Power supply
6	Address junction
7	Address resonance
8	DIGITAL-DC/DC CONVERTER

How to release the power down state
AC power OFF
↓
Wait for PD LED in the power supply module to shut off (around 30 seconds).
↓
next, wait for five seconds.
↓
Turn AC power ON.
* After power down release, this unit comes up in the standby state.

Block Diagram of Shut Down Signal System



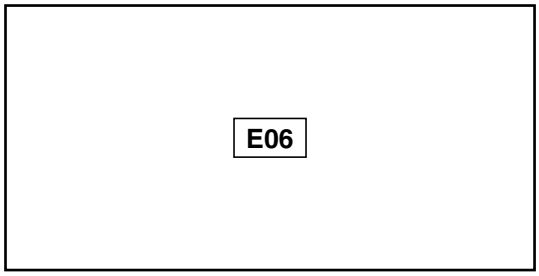
Note: ① - ④ Shows LED flashing number of times when shut has occurred.

Shut down diagnosis

① Panel microcomputer NG

When a module microcomputer failed in communication with a panel microcomputer, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.

Abnormality to expect
Open / Short of communication line in the Assy



② DIGITAL-IIC communication NG

When a module microcomputer failed in communication with outside EEPROM or EXPANDER, this NG occurs.
Shut down after OSD display for 30 seconds from the NG detection.
* However, this communication NG may occur in the standby state.

Abnormality to expect
- Open / Short of communication line in the DIGITAL VIDEO, MR INTERFACE and AUDIO Assys
- Check points.
  DIGITAL VIDEO Assy (D1) ↔ SW POWER SUPPLY Module (P2)
  DIGITAL VIDEO Assy (D3) ↔ MR INTERFACE Assy (R3)
  MR INTERFACE Assy (R23) ↔ AUDIO Assy (A24)
  System Cable

③ Dew detection

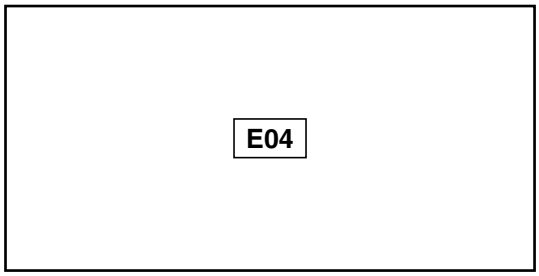
When it becomes the dew state in this unit, this NG occurs.
After the dew detection, shuts down immediately.

Abnormality to expect for dew drop
Disconnect a connector CN2002 between Dew drop sensor and Y DRIVE Assy.

④ Temperature abnormality

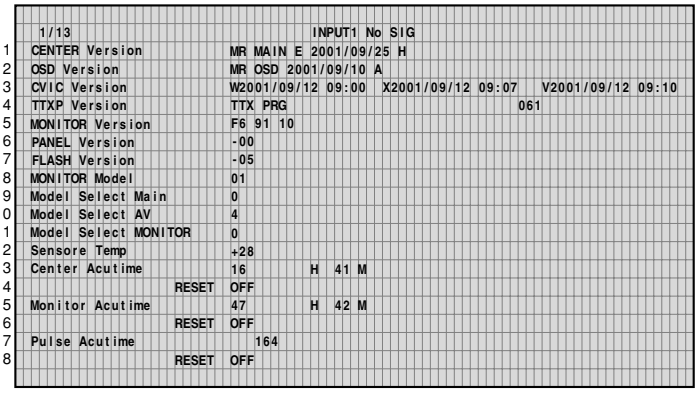
When temperature of this unit is abnormally high, this NG occurs.
Shut down after OSD display from the NG detection for 30 seconds.
Note: When temperature fell down during indication, return to the normal operation.

Abnormality to expect when it occurs in the environment that is not high-temperature
- Disconnect a connector between DIGITAL VIDEO Assy (D18) and temperature sensor 1 (TE1).

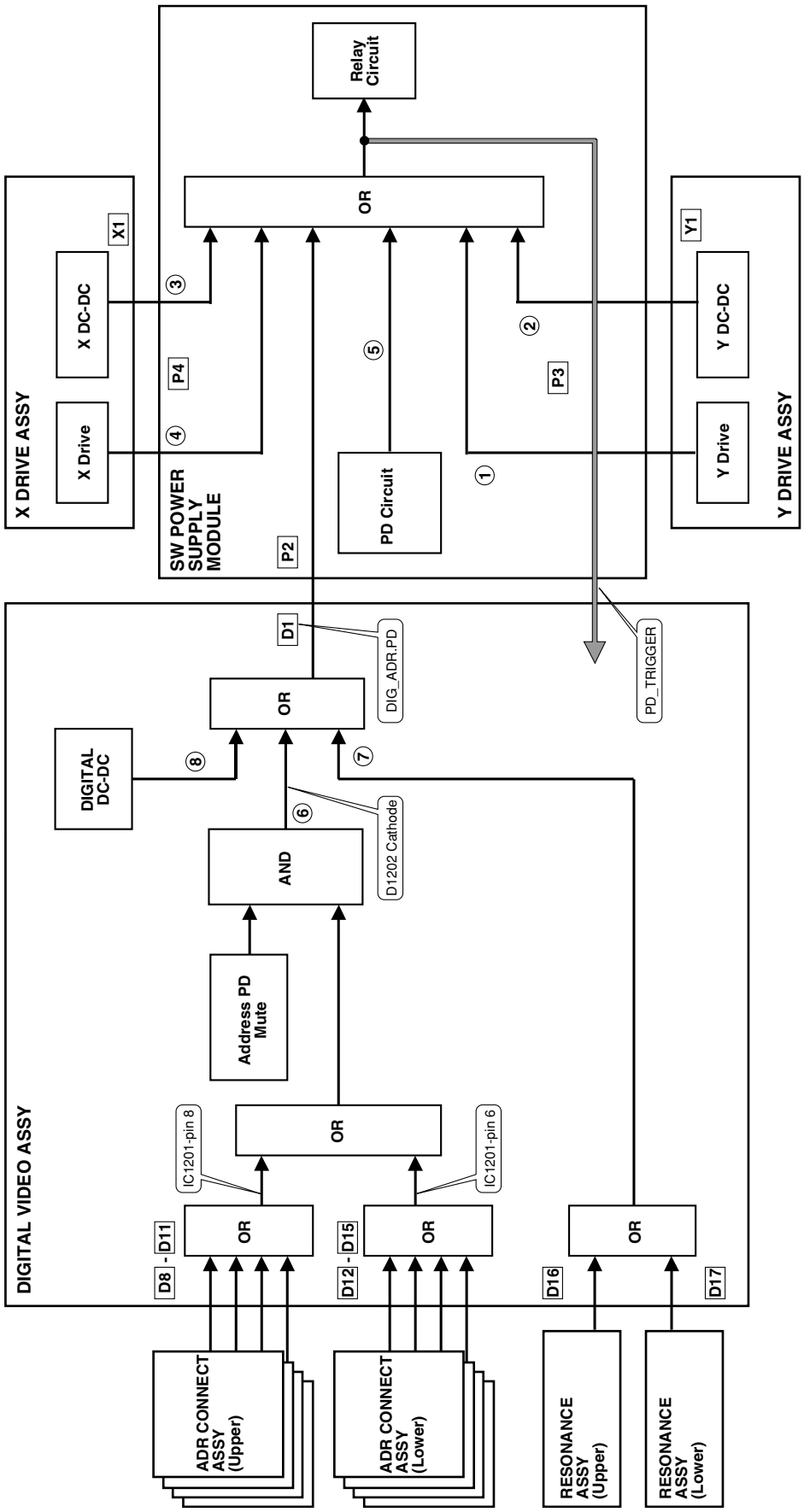


Reference

Shut down temperature of each temperature sensor
Sensor Temp ≧ 78


1/13
INPUT1 No SIG
1 CENTER Version MR MAIN E 2001/09/25 H
2 OSD Version MR OSD 2001/09/10 A
3 CVIC Version W2001/09/12 09:00 X2001/09/12 09:07 V2001/09/12 09:10
4 TTXP Version TTX PRG 061
5 MONITOR Version F6 91 10
6 PANEL Version -00
7 FLASH Version -05
8 MONITOR Model 01
9 Model Select Main 0
10 Model Select AV 4
11 Model Select MONITOR 0
12 Sensore Temp +28
13 Center Acutime 16 H 41 M
14 RESET OFF
15 Monitor Acutime 47 H 42 M
16 RESET OFF
17 Pulse Acutime 164
18 RESET OFF

Block Diagram of Power Down Signal System



Note: ① - ⑧ Shows LED flashing number of times when power down has occurred.

Function of the various protection circuits (P.D. circuit)

Assy Name	Red LED Number of Blinks	Kind of P.D. Circuit	Function	Remarks
Y DRIVE Assy	1	VCP OCP	P.D. by VCP overcurrent	
	2	VOFS OVP	P.D. by VOFS overvoltage	
		VOFS UVP	P.D. by VOFS undervoltage (= overcurrent)	
		VH OVP	P.D. by VH overvoltage	
		VH UVP	P.D. by VH undervoltage (= overcurrent)	
		IC5V UVP	P.D. by IC5V undervoltage (= overcurrent)	
X DRIVE Assy	3	VRN OVP	P.D. by VRN overvoltage	
		VRN UVP	P.D. by VRN undervoltage (= overcurrent)	
	4	VCP OCP	P.D. by VCP overcurrent	
		RESET OCP	P.D. by reset circuit overcurrent	
SW POWER SUPPLY Module	5	VSUS OVP	P.D. by VSUS overvoltage	
		VSUS UVP	P.D. by VSUS undervoltage (= overcurrent)	
		VADR OVP	P.D. by VADR overvoltage	
		VADR UVP	P.D. by VADR undervoltage (= overcurrent)	
		15V OVP	P.D. by 15V overvoltage	
		15V UVP	P.D. by 15V undervoltage (= overcurrent)	
		12V UVP	P.D. by 12V undervoltage (= overcurrent)	
		6.5V OVP	P.D. by 6.5V overvoltage	
		6.5V UVP	P.D. by 6.5V undervoltage (= overcurrent)	
		13.5V UVP	P.D. by 13.5V undervoltage (= overcurrent)	
		-9V UVP	P.D. by -9V undervoltage (= overcurrent)	
		+B OVP	P.D. by +B overvoltage	
		+B OCP	P.D. by +B overcurrent	
		AC200V P.D.	P.D. by AC200V apply	Note 1
			PFC module overheat protection	
			VSUS arc resistance overheat protection	
ADR CONNECT Assy	6	ADR.PD	P.D. by disconnecting the connector	
RESONANCE Assy	7	ADR.K.PD	P.D. by ICP open and TCP defective	
DIGITAL VIDEO Assy	8	5.0V OVP	P.D. by 5V overvoltage	
		5.0V UVP	P.D. by 5V undervoltage (= overcurrent)	
		3.3V OVP	P.D. by 3.3V overvoltage	
		3.3V UVP	P.D. by 3.3V undervoltage (= overcurrent)	
		2.5V OVP	P.D. by 2.5V overvoltage	
		2.5V UVP	P.D. by 2.5V undervoltage (= overcurrent)	

Reference
OVP : **O**ver **V**oltage **P**rotect
UVP : **U**nder **V**oltage **P**rotect
OCP : **O**ver **C**urrent **P**rotect

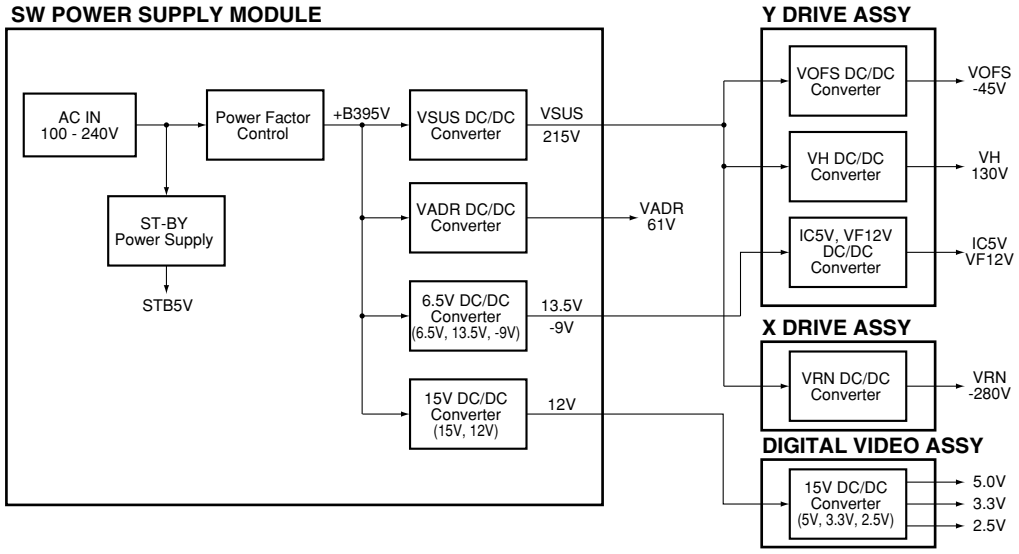
Note 1: AC200V P.D. is not applicable to the PDP-433PE and PDP-433PU models.

Diagnosis of the error point in the various protection circuit (P.D. circuit) operation (Red LED blinks)

Number of Blinks	P.D. Point in Operation	Error Pont	Possible Part of Error	Circuit State	Operation P.D. Circuit	Diagnosis Condition
1	Y DRIVE	Y DRIVE Assy	IC2206, IC2214 (Pulse module), IC2203, IC2204, IC2212, IC2213, IC2213, IC2217, R2209	K2211 Lo	VCP OCP	
2	Y DC DC	VOFS D/D CONV. BLOCK (Y DRIVE Assy)	IC2702, IC2709, IC2715	K2712 Lo	VOFS OVP	
		VOFS D/D CONV. BLOCK (Y DRIVE Assy)	IC2701, IC2702, IC2709, IC2715	K2709 Lo	VOFS UVP	Drive section (control signal, output elements etc.) in normal operation
			Q2211, Q2212, R2277, IC2208, IC2210			VOFS D/D CONV. BLOCK in normal operation
		VH D/D CONV. BLOCK (Y DRIVE Assy)	IC2712, IC2716	K2719 Lo	VH OVP	
		VH D/D CONV. BLOCK (Y DRIVE Assy)	IC2711, IC2712, IC2716	K2718 Lo	VH UVP	Drive section (control signal, output elements etc.) in normal operation
		SCAN (A), (B) Assy	SCAN IC			VH D/D CONV. BLOCK in normal operation
		IC5V D/D CONV. BLOCK (Y DRIVE Assy)	IC2704, IC2706, IC2717			SCAN Assy in normal operation
		SCAN (A), (B) Assy	SCAN IC	K2713 Lo	IC5V UVP	IC5V D/D CONV. BLOCK in normal operation
		IC5V D/D CONV. BLOCK (Y DRIVE Assy)	IC2704, IC2706, IC2717			SCAN Assy in normal operation
3	X DC DC	VRN D/D CONV. BLOCK (X DRIVE Assy)	IC3702, IC3712	K3708 Lo	VRN OVP	
		VRN D/D CONV. BLOCK (X DRIVE Assy)	IC3701, IC3702, IC3712	K3705 Lo	VRN UVP	Drive section (control signal, output elements etc.) in normal operation
		X DRIVE Assy	Q3122			VRN D/D CONV. BLOCK in normal operation
4	X DRIVE	X DRIVE Assy	IC3200, IC3201 (pulse module), IC3103, IC3104, IC3106, IC3107, IC3110, IC3113, R3109	K3103 Lo	VCP OCP	
			Q3122	K3102 Lo	VRN OCP	
5	PS	X DRIVE Assy	IC3200, IC3201 (Pulse module)			When P4 connector disconnected, P.D. does not occur
		Y DRIVE Assy	IC2206, IC2214 (Pulse module)			When P3 connector disconnected, P.D. does not occur
		MX AUDIO Assy	IC8601 (Audio IC)			When P6 connector disconnected, P.D. does not occur
		ADDRESS CONNECT A - D Assy, RESONANCE Assy, D/D CONV. BLOCK (DIGITAL VIDEO Assy)				When pin 5 of P2 connector disconnected, P.D. does not occur
		SW POWER SUPPLY Module	SW POWER SUPPLY Module			When the voltage is not output even if P4, P3 and P6 connectors disconnected
6	ADR	ADDRESS CONNECT A~D Assy	Disconnect D8 - D15 connectors		ADR. PD	
7	ADR K	RESONANCE Assy	TCP damage of IC6704 (ICP), disconnect D16 and D17 connectors, panel microcomputer is defective, outside Flash ROM of the panel microcomputer is defective.		ADR. K. PD	
8	DIGITAL DC DC	D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1901 Lo	5.0V OVP	
				K1902 Lo	5.0V UVP	
		D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1903 Lo	3.3V OVP	
				K1904 Lo	3.3V UVP	
		D/D CONV. BLOCK (DIGITAL VIDEO Assy)	IC1901	K1905 Lo	2.5V OVP	
				K1906 Lo	2.5V UVP	

Note: About PS PD
The condition that Red LED blinks five times (power supply PD)
1 When the internal protection circuit of SW POWER SUPPLY Module worked
2 When a microcomputer was not able to identify the PD point
↓
Being careful because the protection circuit of SW POWER SUPPLY Module cannot conclude that worked.

Block diagram for Power supply section



Supplementary information

1. Power on/off switch for the large-signal system (SW102)

Function: Only the power for the small-signal system (15V, 12V, 6.5V, 13.5V, and -9V) is on, and the power for the large-signal system (VSUS, VADR) is off.

Usage: Use when only an operational check for the small-signal system is required.

Supplementary information:
When this switch is to be used, the wires of pin 5 (DIG, ADR, and PD) of the P2 connector of the power-supply module should be disconnected to prevent the PD circuit from operating. To turn the power of the large-signal system off without using this switch, operation from an external PC through RS-232C commands "DRF" is basically required. In this case, the above procedure is not required, as the PD circuit is muted by software.

Method of power supply ON in the large signal system OFF state with RS-232C command

① Confirm that this unit is the standby state.
② Transmit RS-232C command "DRF."
③ Turn the power supply ON by remote control unit, side key or command "PON."

* When turn the power supply OFF once, return to setting of large signal system ON.
When turn the power supply ON in the large signal system OFF, transmit "DRF" command each time.

2. 200V AC power-down switch (SW101)

Function: While 200V AC voltage is applied, operation of the PD circuit is turned on and off (ON when the switch is set to 100V AC, and OFF when the switch is set to 200V AC).

Setting: For the PU model only, the switch is set to 100V, and for other models, it is set to 200V.

3. Temperature compensation of the VSUS voltage for the drive system

Function: Control the power supply voltage mentioned above according to temperature. (Temperature compensation works so that the voltage is lowered on the lower-temperature side, and is raised on the higher-temperature side.)

Purpose: To improve the yield by compensating the temperature characteristics of the panel.

Supplementary information:
For this model, temperature compensation is performed only for the VSUS voltage, and not for the VOFS voltage, and it is controlled by software.

4. When a fuse blows

- If a fuse blows, never turn the power on again only after replacing the fuse. (In most cases, the fuse itself did not have any problem. So as long as factors of overcurrent have not been removed, chances of destruction increase every time the power is turned on. In the worst case, about a dozen parts may be destroyed.)
- Principally, the whole power-supply module must be replaced.

5. Voltage adjustment of the panel drive

As this model employs the electronic VR system for the VSUS and VOFS voltages, and as the voltage-adjustment data are stored in the DIGITAL assembly, voltage adjustment of the panel drive is not necessary when the power-supply modules are changed. (For VADR, VH, and VRN, adjustments with semifixed VR controls are necessary.)

For this model, as the power-supply block has been developed and designed by an outside vendor, at the point you know which module is a cause of failure (through diagnosis described elsewhere in this manual), change the corresponding modules, and do not diagnose or repair the module.

Similarly, the switches and the semifixed VRs inside the power-supply module must not be adjusted without a special reason.